

CHICAGO

Medical Examiner,

EDITED BY

N. S. DAVIS, M.D.

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THE
CHICAGO MEDICAL EXAMINER.

N. S. DAVIS, M.D., EDITOR.

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Original Contributions.

ARTICLE XLII.

THE FORCES OF ORGANIC LIFE—WITH SOME
REMARKS ON DR. BREED'S CASE OF ILEITIS.*

By Z. C. McELROY, M.D., President Muskingum County Medical Society,
Zanesville, Ohio.

The case described by Dr. Breed is an extremely interesting one, as is also his manner of reporting it. In commenting on the facts, as he has presented them, it is not my purpose to censure him, but to present an analysis of its phenomena, from a different standpoint, and conclusions somewhat different from those at which he arrived; for, it seems to me, he failed to comprehend it, either before or after death, though he scrutinized it so closely. Working in the accredited methods of investigation, his conclusions are fully warranted by the philosophy by which he was guided. The purpose of this paper is to review it from a physical basis of life, in the same way as any other problem in physical science would be studied, on its facts alone.

For my purposes, he does not report what to me would be the most important single item in the daily record of his patient's condition—his temperature, ascertained by a correct thermometer in the axilla. The fact of his patient being a "compositor,"

* CHICAGO MEDICAL EXAMINER, for October, 1869.

seems not to have directed his attention to the possibility of lead having something to do with his patient's condition and death. His *post mortem* would have been more complete had he extended his examination to the gray matter of the nerve plexuses, and lower portion of the spinal chord.

The following are, briefly, the principles of organic life, on a physical basis, which will guide me in the study of Dr. B.'s case:—

1st. The reign of law, in organic and inorganic nature, is supreme and invariable. The order, harmony, and perpetuity of the universe depend upon the absolute inflexibility of natural law. None flinched or failed in Dr. B.'s case.

2d. The total quantity of matter and force in the world is fixed and unchangeable. Nothing can be added and nothing destroyed. The forces of the inorganic world are mutually convertible into each other, and each into all; and the forces of organic life are correlated with the physical forces. There is, in fact, an absolute unity of force, in organic and inorganic nature.

3d. Excluding from the human body known inorganic elements and the operation of the known physical forces of light, heat, electricity, magnetism, etc., and there is left nothing but its *forms*, *i.e.*, the types or shapes of the tissues, textures, and organs—and that is all there is of the hitherto mysterious and incomprehensible vital force, about or in it. Vitality, therefore, is the preserver of form, with the momentarily changing material of its tissues and textures. Over forms, normal or abnormal, therapeutic agents have no control or influence whatever, except to destroy; therefore, as physicians, we need not trouble ourselves about vitality, in our ministrations to the sick. All that we can influence by therapeutic, remedial, or hygienic agencies is, the matter and force of the inorganic world, organized as food by the vegetable kingdom; or the vegetable matter in organized tissues of other animals, in its ascent, through the processes of digestion and assimilation, to the normal types and forms of organic life, with normal dynamic capabilities; and the decay, oxidation, or waste of the tissues in the evolution of

normal organic dynamics, as heat, mechanical motion, sensation, emotion, chemical affinity, and intellection.

4th. A conception of the human body, embracing most of its prominent facts, in the evolution of force, is obtained in the study of a burning candle, which gives light and heat, because it, the candle, is being consumed. So, of organic dynamics, each result, be it thermal, mechanical, chemical, sensory, emotional, or intellectual, is at the expense of the tissues; thus, so much heat, so much tissue resolved into carbonic acid, water, and urea, or other products evolved in the decay of organic tissues; so of mechanical, chemical, sensory, emotional, and intellectual results, so much tissue resolved into carbonic acid, water, and urea. Thus, this very identical memoir, whatever it may be worth to those who may choose to read it, has been composed at the expense of the gray, brain matter and muscles, and other tissues of the author; and so of the reader, for every impression received by his mind, so much brain and other tissue reduced in organization, and started on its way back to the positions of its elements in inorganic nature.

The thermometer measures the rate of tissue waste—nothing more, nothing less—in accordance with the law, “for every dynamic result there must be change of matter,” whether in organic or inorganic natures; and that is the impassable gulf in the way of a “perpetual motion” machine; and hence the importance of the thermometer, clinically, for a single degree of variation from the normal temperature of the body marks too much or too little waste. To maintain organic life in its highest perfection, each day’s waste must be repaired, and each day’s repair wasted.

5th. The human body is a unity, an integer, composed of many fractions, in arranged and disarranged conditions, *i.e.*, in health and disease. Whatever impressions are made or received on one part are instantly communicated, through the white matter of the nervous chords, to the whole organism. There is, therefore, no such a thing as a local disease—all the nosology of the past and present to the contrary notwithstanding.

6th. The influence, or action, or effects of all therapeutic,

remedial, and hygienic agents, or measures, are general, *i.e.*, influence the whole body, and not a part of it, as the nomenclature of the *materia medica* and nosological classifications of diseases teach and imply.

7th. The disease is always something less, not something added, to normal life. The human tissues in health are examples of the highest organization in the universe, are the very perfection of organic life, and all changes are to lower states of organization, and to death.

8th. That the patient is, under all circumstances whatever, superior to his or her maladies, and should be the main object of care on the part of the physician. Disease, or a disarrangement of the body, is always of secondary importance to the patient. Homeopathy, hydropathy, eclecticism, and other empirical systems of practical medicine are gigantic protests against, as well as grotesque caricatures of, the philosophy and practice of regular medicine. What regular medicine needs is a central idea or theory of life, embodying its empirical facts and experiences, in health and disease. Practitioners of medicine rarely rise above their philosophy. Physical science can supply this need.

9th. The nerve masses, containing gray and white matter, are the organic electro-magnetic batteries, evolving organic force. The nerve chords, containing only white matter, are, like the telegraph wires, which now so nearly girdle the earth, conductors of force only, or, perhaps, more properly, force and impressions. The larger and smaller brain, medulla oblongata, and spinal chord are the main force evolving masses. The ganglions and plexuses, containing gray matter—the so-called sympathetic system—one supplemental to the main masses, and are found only where important organs are to be presided over, so as to render the performance of their allotted functions, or offices, to some extent, independent of the main masses. The necessity for this anatomical arrangement is obvious enough; for, were it otherwise, concussions or shocks from falls, accidents, and moral impressions would more uniformly prove fatal to life; for these act by suspending destructive metamorphosis, or the changes of

matter evolving force; and as life, or organic dynamics, depend absolutely on changes of matter, the result, very frequently, would be a true enthanasia.

The facts stated by Dr. Breed, in relation to his case of ileitis, are as follows:—

1st day. The patient, a lad, 16 years of age, a compositor, after a chill, had some fever; pulse 80, moderately full and strong; pain in the bowels, somewhat paroxysmal, though never quite easy. The bowels were a little distended, elastic, and a little harder to the feel than natural, with tenderness on pressure. Tongue moist and covered with a dark, slimy coating. Had had no motion in bowels for 24 hours. Had vomited freely. The treatment instituted by Dr. B. is not noticed, as it falls outside of the purposes of this memoir.

2d day. No motion from bowels; urine free, but not remarkably high-colored. Vomiting persistent, decidedly bilious, and very dark; pulse 98, soft, rapid, and undulating; artery large; circulation languid; copious perspiration during sleep; tenderness of abdomen much the same; not much distension, though uniform; no flatus, or meteorismus; on applying ear to the abdomen no sound was heard, no gurgling—a dead silence prevailed throughout the abdominal region; during vomiting, muscles of abdomen did not coöperate with those of thorax; matter vomited, grass green, and acid.

3d day. Bowels not moved; vomiting continues; countenance haggard; takes no nourishment, except beef-tea, in enemata.

4th day. Less sweating than third day; vomited occasionally; countenance anxious; very restless; passed urine several times; pulse 100; artery large, felt soft and undulating under the finger, against which the pulse dashed with wave-like impression, and was gone; prostration evidently increasing. In the afternoon, pulse 100; passed some fecal matter; vomiting very distressing; hiccough.

5th day. Vomiting continues; small fecal discharges.

6th day. Vomiting; has become stercoraceous; passed urine several times; pulse 120, soft and undulating; countenance

hippocratic; restless; somewhat delirious; no meteorism; bowels slightly tympanitic; death, soon after midnight.

It is further remarked (p. 584), there was no disposition to flex the legs on the abdomen; could lie on either side.

Post Mortem.—Abdomen moderately distended; peritoneum thickened, softened, its bloodvessels enlarged, very dark color, but no effusion; small intestines nearly empty, not collapsed, but generally discolored, with extensive adhesions in various places; muscular and mucous coats of intestines dark, thickened, nearly in a state of sphacelus; stomach not opened, but its external appearance seemed healthy; gall-bladder moderately distended with healthy bile; other organs examined were healthy; no mechanical obstruction; no impacted feces, or undigested matter found in bowels.

The facts of symptomology are only reproduced, and mainly in the very words of Dr. B.; though, for brevity, some sentences have been slightly abridged, but not so as to impair or alter the sense in which he used them.

A study of this young man's case, in the light of the general principles laid down, the phenomena which so sorely puzzled Dr. B. become less opaque and more understandable.

The patient was a compositor, handling leaden types during working hours; perhaps, like other compositors, holding type in his mouth very often, which is, probably, the clue to unravel the whole case. On the first day, symptoms, a negation; was probably confined to the house, possibly to bed. No mention is made of the duration of the prodromic symptoms beyond a few hours. He is weak, has some pain in the bowels, and has vomited. The absence of the temperature of his body is a very serious gap in the detail of the symptoms. It may have been above or below the normal standard; but, most likely, would have shown a range of two or more degrees above, exactly corresponding with the chemical changes taking place in the abdomen; for these chemical changes would, most probably, be correlated in heat. The state of the temperature would have given the key to the proper treatment. Here, the question as to whether it was the patient himself, or only his bowels that were sick, would,

with me, have naturally come up for settlement and decision. The thermometer would have greatly aided me, for if the temperature was much above natural, then it would have been clear to me that it was the patient himself that was sick; and as all patients are superior to their maladies, the patient would have been the principal object of professional care. And by this is meant, that no *coup de etats* would have been undertaken to catch the disease off its guard, and thus kill or expel it, and so cure the patient at once. But supposing that it was the dreaded *inflammation* that was in progress in the patient's abdomen, as shown by the increase of temperature, the question, what is inflammation? might be appropriately discussed in the mind. Is it a higher or lower grade of organic life than health? Is it something added to or subtracted from the normal condition of the tissues in which it may be located? Does it tend to a condition higher than life, and, therefore, desirable? or does it tend to death? If it tends to death, what is it? Is it like a viper, a something foreign to the body, which has gained access to its interior? Or, is it a super-oxidation of tissue, not yielding normal organic force? Is the tissue thus wasted being replaced? Are the processes of repair and waste normal? These may be easily answered. Inflammation is a super-oxidation of tissue, with a suspension of repair in normal type, the chemical changes being correlated as heat, and not normal organic force. It is nothing more, nothing less, than a natural process taking place too rapidly, with repair arrested; the blood plasma, failing to reach the normal type of tissue, is poured out into the meshes of the wasting tissue, or on its surfaces, constituting the thickening spoken of by Dr. B. The decay of this exudation constitutes pus.

But the case was a negation, the first day. Second day, the ear detects no sounds in the abdomen; the legs are not drawn up; the pulse is feeble; there is vomiting. What is the significance of these facts? Failing power is their lesson. Where? The sources of power are the nerve masses, containing gray matter, and it is to them attention must be turned for an explanation. Nothing is said of the state of the pupil by Dr.

Breed, at any time. I do not know why this circular muscle of the eye should be so called. While its main purpose is, undoubtedly, to regulate the admission of light into the posterior chambers of the eye—expanding, as it does, in dim, and contracting in strong or bright, light—it incidentally serves another and still more important purpose, to those who will observe it, in revealing the condition of the forces of organic life. It is, so to speak, the dial on which is momentarily recorded the condition of the forces of life. In Dr. Breed's case, it was probably widely expanded and sluggish, and, if so, it was additional evidence that the phenomena detailed by Dr. Breed indicated failing organic power.

How and why did this young man's dynamics fail? He was a "compositor," handling type, mainly composed of lead, during all his working hours; and the probabilities are that the failure of the dynamics was due to lead poisoning, or lead paralysis.

What is lead poisoning? What is its *modus operandi* in producing colic and paralysis?

Referring again to the burning candle, as affording the best conception of human organic dynamics—though equally applicable to all animal organic dynamics—how would incombustible matter, as lead, combined with its tallow, be likely to influence its combustion? A candle requires a soft, spongy wick. When flame is first applied to the wick, in a new candle, it burns very feebly for a time. After a while, a portion of the end of the wick becomes charred, but still very porous, and around it, at a certain distance below the flame, a little cup is formed, filled with tallow, rendered fluid by the heat from the combustion going on above it. This fluid tallow is drawn up through the soft, spongy wick to the junction of the charred and uncharred wick, where it is decomposed or consumed; the tallow resolved into light, heat, aqueous vapor, and carbonic acid. The charred portion of the wick, in the heat of the flame, soon solidifies, so that fluid tallow cannot pass through it, and be divided, so that combustion can take place. This it is requisite to remove, to obtain the maximum of light. Now, suppose minute portions of oxide of lead were diffused through the tallow, it would fill

up the spongy portion of the wick much more rapidly; and if it were snuffed all the time, it would still give much less light than it would if the tallow contained no incombustible matter, or matter incapable of assuming the gaseous or liquid forms. This gives me a clear mental conception of lead poisoning and lead paralysis. The lead may be interslitally deposited in the constructing tissues, or it may otherwise act by preventing the construction of tissue in normal type, with normal dynamic capabilities. Perhaps it may act in both ways. But it must act in one or the other, and it detracts nothing from the value of the conception which, or in both. As it cannot be made to assume either the fluid or gaseous form, by the chemistry of organic life, it accumulates in the tissues, and interferes with their proper oxidation, and the evolution of normal organic force; for only normal tissue can evolve normal force by its decay. And that, it seems probable, is all there is, or can be, of lead poisoning, or lead paralysis.

It may have been so in the lad treated by Dr. Breed, or it may not. But there certainly was a defective evolution of force, and that defect extended to the nerve masses containing gray matter; for, if they had been in a state of integrity, there would have been more pain, probably amounting to spasm. The problem of organic life for our study in the human body is, the conversion of food into tissue, and its oxidation, so as to produce normal dynamic force. In the young lad's case, tissue-making was certainly suspended, probably on the first day he was seen by Dr. B., but certainly on the second, and forever after. Oxidation, in the production of normal force, was as certainly suspended from, and, probably, prior to, the first day's treatment, though his candle did not cease to burn till the close of the sixth day. The *post mortem* revealed that the contents of the abdominal cavity had been partially surrendered to the process of ordinary putrefactive decomposition, some days before his dissolution. The nerve masses would, probably, have shown equally, or, perhaps, more striking changes, to the microscopically aided eye, and, very likely, to the unassisted vision.

In studying the case, the leading fact to be borne in mind is,

that all the phenomena occurred in obedience to natural law. No natural law was specially put in force for his destruction, and none suspended for his protection. All the chemistry and physics, in his case, were complete. Dr. Breed, according to his own showing, failed to interpret the phenomena rightly. From his published statement of the case, and in no unfriendly spirit, the results of my study of his case are presented in this memoir. As we differ so widely, it is not probable both are right, though, it is possible, both of us may be wrong. Through two decades of practice, I looked upon life and disease precisely as he did in this case, with the result of my being in a perpetual fog—no clear light in any direction. My philosophy was founded on conjecture, and my therapeutics on hope. But it is somewhat different now. Regarding the body as a unity, and disease, *per se*, a myth, the so-called diseases to which it is subject being regarded merely as *disarrangements*, and not as separate and special entities; and limiting my conceptions of the *modus operandi* of therapeutic, remedial, and hygienic agencies to their influence on the transformation of food into tissue, or constructive metamorphosis, and the oxidation or decay of tissues, so as to preserve its arrangements in the evolution of the forces of organic life; I certainly prescribe, as I believe, more intelligently, and it may be added, I think, more certainly and successfully than before. For myself, I have, in fact, as I fancy, in a great measure, transferred practical medicine into the domain of exact science. It was not done, however, without effort, and not accomplished at a single bound; for my progress was slow, labored, and gradual. I studied the steam engine, the magnetic telegraph, watches, the operations of the forces of inorganic nature around me, in all kinds of machinery, the correlation of the physical forces, and applied the methods of investigation in physical science to the elucidation of the phenomena of organic life, with the results stated. I am conscious that I am far from being perfect, have, indeed, a great deal to do, and but a fragment of life to do it in; but I have learned to observe and think on my legs, and in my carriage, as well as in my study; and so, when awake, am never altogether idle. The dif-

faculties in the way of getting out of the established and well-worn "ruts" of thought and philosophy, great as they have been found, have all been surmounted. I do not any more think in the old channels. I ask this of all medicines, can you, or do you, aid in the transformation of food into flesh, or its waste or decay, by oxidation, so as to evolve normal, organic force, and the exit of the results of tissue decay properly from the body? If the empirical facts of therapeutics gives *no* for answer, then, I leave it with the apothecary, as of being no use to any of those who consult me for disarrangements of their bodies. The empirical facts of the *materia medica* suffice to obtain a tolerably clear conception of the actual or probable influence of any drug on constructive or destructive metamorphosis of the tissues. Nor is any serious difficulty encountered in reconciling the apparently contradictory facts of published therapeutics. For instance, the fixed alkalies, and most, if not all their combinations with acids, are agents to promote waste of tissue, and the elimination of the products of tissue metamorphosis out of the body. A memoir recently appeared in an Eastern journal, extolling the "bromide of potassium," in cholera infantum—a wasting disease (speaking in past ideas to me) of children, during the hot months of summer. Here is an apparent dilemma. "How can you reconcile that with your theory of the action of medicines?" asked a medical friend, who thinks my theory of life all stuff. In reply, I remarked to him, "why do children have the summer complaint?" "Why do they have frequent discharges from the bowels?" "and do those who perish generally wind up their lives in convulsions?" He replied to all the questions, "because they were exhausted by the hot weather." "Please to tell me what is exhaustion?" I asked, "why is it weakness?" he replied, "the warm weather exhausts them, and hence the bowel complaint." That is a fair sample of the muddle of life and therapeutics in which I was myself involved so many years. Now, my conception of the condition of things described as cholera infantum is, that, little by little, the tissues of children are constructed out of normal, molecular type, and, therefore, incapable of evolving normal

organic dynamic force in their decay. To save the child, the "*vis medicatrix natura*," the shadow of the laws of organic life, endeavors to remove this defective tissue by a peroxidation; the force evolved being, for the most part, correlated in heat. The debris of tissue metamorphosis, if retained in the body, wholly arrests the process of tissue repair. The bowel complaint is set up for the escape of these products from the body. If it is arrested by therapeutics, or otherwise; coma and convulsions speedily end the life of the patient. The bromide of potassium, by facilitating the oxidation of the defective tissues, acted in harmony with the laws of organic life, and was, therefore, eminently successful. But it is by no means the only agent or measure by which the same ends are accomplished. Chalk, mercury, blue pill, Rochelle salts, bitart potassa, castor oil, etc., all act in much the same way, *viz.*, by eliminating the debris of tissue metamorphosis, and promoting oxidation.

In conclusion, permit me to thank Dr. Breed, first, for reporting the case; and, secondly, for exposing the inner working of his mind in the study of it. It has afforded me a good apology for writing this memoir, for the sole purpose of aiding others in getting out of the muddle of physiology, pathology, and therapeutics, in which I was so long enveloped myself, if there are any such—a very likely result, as, I think, in my own case, of the existing conceptions and philosophy of organic life.

ARTICLE XLIII.

DR. BREED'S REPLY TO DR. McELROY.

Since my report on Ileitis, in the October number of the *Chicago Medical Examiner*, I have received several letters from medical men living in different parts of the country, in regard to the case.

While all seem to agree in commending the report in a general way, each has some suggestion to make in reference to some minor point, where he thinks the paper might have been improved. In comparing these letters I find that what one

criticises, another praises, and *vice versa*—no two agreeing in condemning the same thing; so that I find it impossible to please all, and, indeed, have not quite satisfied myself. Dr. Holton, an intelligent physician, of Buda, Ill., thinks I should have given more prominence to the peritoneal inflammation, evidenced by the extensive adhesions, as, to his mind, that was the principal lesion to be considered.

Dr. W. H. Nance, a successful and experienced physician of Vermont, Fulton County, Ill., writes me as follows:

"I will say, Doctor, that I am much pleased with the "*report*," and the conclusions drawn from it, and presume that they are correct, in the main, and that you are right in your conclusions respecting the results emanating from inflammation of the muscular coat of the small intestines. I am not sure, however, that in your concluding paragraphs, where you are summing up the fatal results of such a condition, that you have made the happiest selection of a word to represent that condition, where you speak of a portion of the alimentary canal being *paralyzed*.

"That all normal function is suspended, is admitted; but is not that suspension the result of a condition the very reverse of paralysis? Paralysis is a loosening, relaxing, or letting go, from want of nervous force, or energy. But this intestinal condition is the result of a hyper exaltation of the nervous and muscular powers, of the part, blown into the intense heat of inflammation, represented as being *seized* and held as with the hand of some etherial Titan."

Dr. Z. C. McElroy, a medical philosopher of Zanesville, O., in a carefully written "Memoir," on "The forces of organic life," reviews this report from a different stand-point, and, in the light of certain philosophical, physiological, and hypothetical principles laid down by him, reaches a conclusion that it was *simply* a case of lead-poisoning.

Now, as all these suggestions are made in a courteous and friendly way, and intended to enure to my benefit, and promote the science of medicine, I am exceedingly thankful for them, and will try to profit by them. That this report should have

thus called out this discussion, upon the interesting questions involved, is neither surprising nor displeasing to me. Indeed, I have no doubt that, in the end, I shall not receive the *least* of the *benefits* from it.

In offering a few additional remarks upon the same subject, it may as well be admitted, that, while working up the report from the symptoms, history, and autopsy, my mind was, for a time, undecided as to how best to interpret the phenomena. The leading symptoms, during the illness, were those of obstruction. The autopsy, however, revealed the effects of extensive and severe inflammation, involving all the coats of the small intestines, together with such signs as led to the belief that the cerebro-spinal and ganglionic masses were seriously implicated in the disease. While my mind was thus undecided, halting, as it were, between two opinions, *viz.*: Whether I should go back of the inflammation, which was an undoubted element in the disease, and interrogate the nerve centres for the prime cause of the difficulty, or, on the contrary, confine my speculations to the former, and hold inflammation responsible for the trouble; the question of *lead-poisoning* came up for consideration.

The occupation, habits, and several striking peculiarities of the case, conspired to direct my attention to this particular *point*. I was told that the patient was much in the habit of holding *type in his mouth* while at work. This was a leader. The symptoms that led me to suspect the integrity of the nerve centres were, a *decided* and *unmistakable* absence of arterial tensions, and the partial paralysis of the abdominal muscles, so as not to exhibit the usual reflex movements in emesis and defecation; and the *post mortem* displayed, an *atonic* condition of the muscular fiber of the intestinal walls, indicated by a distended condition of the empty intestines, where we usually find them collapsed.

I first directed my attention to this question. In lead-poisoning, are the intestines, at the seat of the disease, distended, dilated, or are they, on the contrary, collapsed, or contracted? After a careful investigation of this subject, I came to the con-

clusion that there was a vast preponderance of testimony in favor of the opinion that, where there was any pathological appearance at all, a *contracted* and *collapsed* condition were those *generally found* at the seat of the disease. The arteries were also, in lead disease, smaller than natural, from the same general contractile condition, affecting the arterial coats, and, moreover, the tissues affected were found *generally pale, exsanguined*, and more or less *wasted*. The disease, "tabes saturnina," is supposed to be due to this constricting influence of the bloodvessels.

While DeHaen, Merat, Eberly, Wood, and Letherby, concur in the belief that the *contracted* or *collapsed* state of the empty bowel, at the seat of the disease, is the pathological condition to be looked for, Sir G. Baker, Andral, Townsen, West, and Louis have *often found no alterations whatever* in the *intestines*. In a case which terminated with the symptoms of saturnine encephalopathia, *viz.*: delirium insensibility, and tetanic convulsions, Empis and Robinet found no anatomical alterations of any importance. Lead was discovered by incineration in the brain and liver.

In Letherby's case, lead was freely discovered in the stomach, in the brain, muscles, liver, intestines, blood, and in the serum of the cerebral ventricles. The stomach and intestines were *pale*, and the latter were contracted, and in some places invaginated. Pereira says, in regard to the constitutional effects of small doses of lead, that the arteries become reduced in size and activity, and that the *pulse becomes* slower and *smaller*, from which I infer that the preparations of lead give rise to a contracted state of the bloodvessels. How did these symptoms correspond with my case? Why, the muscular coat of the small intestines, besides showing such signs of inflammation as thickening, a deep red, or purple color, the muscular fibers were evidently in an atonic, inactive, or paralyzed condition, so that they were quite unable to propel the contents of the tube onward. They had lost their contractile power. This was a prominent feature in the case, and one that I believed was the key to the explanation of the unusual phenomena in

the symptoms, and I desired, therefore, particularly to emphasize it. This want of contractile power in these muscular fibers was the cause of the symptoms of obstruction. There was no other apparent cause to be found. Was this suspended function due to some lesion in the nerve centres, or was it a result of the inflammation of the muscular coat itself? This was the question. I acknowledged that I was not quite satisfied on this point; but, in either case, the symptoms of obstruction would be the same, and, as the former hypothesis involved a somewhat speculative question, and the latter would fully account for all the symptoms, and, moreover, not finding the symptoms to correspond with those of lead-poisoning, I concluded to adopt the simpler explanation, and not go behind the inflammation in the structures for the proximate cause.

While my mind was perplexed on this subject, I was assisted, perhaps, by Prof. Gross' definition of disease, quoted by Dr. McElroy, in reply to Dr. Hendrick, in the July number of the *Chicago Medical Examiner*, for 1868. Dr. McElroy says:—

“First. What is disease? Disease is not, as it was formerly supposed to be, a special entity, a particular essence, a something vague, intangible, mysterious, but simply a *departure* from the normal standard, a change in, or of a part, brought about by the *perverted* action of its *circulation*, *innervation*, and *nutrition*; and modified by function and structure. Nearly every disease, whatever its nature or site, is *essentially* an *inflammation*. Even in what are called the *neuroses*, or nervous affections, *inflammation* generally plays a conspicuous part.”* By carefully scanning this definition, it will be seen that disease is simply an *abnormal condition*, an obvious change, in a part, brought about by a *perverted* action of the *circulation*, *innervation*, or *nutrition*. Dr. McElroy seems to endorse this definition, and hence, he will be likely to excuse me for not being ready to call the disease by some name that would aim to ignore the *inflammation*, and fix the trouble upon the lesion of *innervation*. Let it be remarked that the *perverted* action *here* is not the disease, but the proximate cause of the disease. Now,

* Prof. Gross, “Now and Then,” published address. 1867.

suppose Dr. McElroy does succeed in establishing a fact in this case that the trouble could be traced remotely to the gray matter of the "nervous masses," it can only be called a *pervverted action* (the cause), resulting in *inflammation* (the result, or disease,) according to his own definition. If all diseases are, moreover, essentially an *inflammation*, I could not have been very far wrong when I denominated the disease an inflammation of a particular structure. But I do not desire to split hairs with the Doctor, for I am too well pleased with his paper for that.

That the reader may have a fuller view of the matter, and enable him the better to understand my reasons for not ascribing the disease to lead, I here submit the principal symptoms of the two diseases, in parallel columns. The symptoms of lead-poisoning in the first, and those reported in my case of ileitis, in the second:—

POST MORTEM APPEARANCES IN BOTH.

Symptoms of Lead-Poisoning.

Intestines generally contracted.
Inflammation not characteristic.
Muscular fiber *pale*, exsanguined, and wasted.
Skin *generally* hot and dry.
Much *pain* and colic.
Signs of spasms.
Convulsions.
Gums, pale bluish line.
Tongue flabby, and tremulous.

Mouth dry.
Urine scanty, and high colored.

Face pale, dingy, and sallow.
Motor power impaired.
Weakness of wrists and joints.
Extremities cramped.
Pressure gives relief to pain.
Muscles of chest spasmodically contracted.
Pulse slow, and artery small.

Symptoms of Ileitis.

Intestines dilated.
Inflammation severe.
Muscular fiber red, purple, atonic, and thickened.
Skin *cool* and *moist*.
Very little pain.
No spasms.
No convulsions.

Tongue covered with dark, slimy coating.
Mouth moist.
Urine free, not particularly high colored.
Face flushed and livid.
Sensory power more injured.
Normal.
Normal.
Pressure not well borne.
Muscles of abdomen *paralyzed*.

Pulse slow, and soft, undulating, and artery large.

Loss of sensorial function.

Palsy of extremities.

Vomiting bilious matters.

Hardened feces in passages.

Normal.

Normal.

Vomiting bilious and stercoraceous matters.

Feces thin and aqueous.

Such are the most prominent symptoms, and anatomical changes found in lead disease, as contrasted with those reported in the case denominated ileitis.

After as full and careful an examination of the symptoms, morbid anatomy, and general history of lead-poisoning, as I was able to make, and comparing them with the case in hand, *pro* and *con*, I determined on the name "*Ileitis*," as the best term I could think of, to indicate the nature and pathology of the affection, I concluded, therefore, to make no mention of lead, as cutting any figure in the disease; but I aimed, nevertheless, to employ such phraseology as would convey to the mind all the important features of the case. I expected every physician who read the report *carefully* would form his own opinion of the diagnosis, and, therefore, I concluded to send it forth to meet its fate, while I anxiously waited the *denouement*, whatever it might be.

Whether I was right or not, I do not *now* know. Those who, with myself, looked upon inflammation of the coats of the bowels as the *essential* and most *important element* in the *disease*, will now see, and understand why I used the term "*paralysis*," as I did; while those who, from the symptoms and autopsy, were led to infer some serious lesion of the nerve centres, will, at least, allow the fidelity of the description. It may be remarked in this connection, however, that while studying Dr. Abercrombie's observations on ileus—(see diseases of the abdominal viscera)—I found that he declared, in opposition to all the above authors, that the *collapsed portion* of the *empty intestine*, is the *natural condition*, while the distended portion is the primary seat of the disease; the distention arising from a paralytic condition of the muscular fiber, whereby it is unable to contract and propel the contents of the tube onwards through it. Now this view seems very probably the correct one, if we apply the same hypothesis to lead colic, since the action of lead

upon the muscular fibers of the intestines is doubtless of the same kind as that exerted upon the fibers of the voluntary muscles. This hypothesis, moreover, is greatly strengthened when we consider the therapeutic action of *alum* in *curing lead colic*.

In most, if not all, of our works on therapeutics, there is a striking analogy between the recorded symptoms of lead, and *alum*, when administered internally in small doses. Nevertheless, *alum* is represented as the best remedy in lead colic. This looks unphilosophical, and should be looked into. We do not cure diseases on the Homœopathic theory of "*similia similibus curantur*," but on that of "*contraria contrariis curantur*," instead. Now, Dr. Copeland has actually ascribed the curative effect of *alum* in lead colic, to its power of exciting the contraction of the partially paralyzed muscular coat of the small intestines in this disease. If he is correct in thus regarding these two remedies as antagonistic, and antidotal, in their effects on the system—that, while one has a tendency to relax, and paralyze the intestinal, arterial, and voluntary muscular fiber, the other has a directly opposite tendency; then will the paradox be explained, and the philosophy of our medication be vindicated. I feel under deep obligation to Dr. McElroy, and the other medical gentlemen, for raising these questions in the manner they have, and thus stimulating inquiry on this subject. With my eyes half open to these facts, I felt sure that there was a condition in the case justifying the term paralysis, yet I felt unwilling to launch out into unknown seas, and indulge in fruitless speculations upon the mysteries of innervation. That there was some fault, some abnormal condition in these nerve centres, interfering with their acknowledged function in keeping up that tireless state of muscular tension throughout the body, I felt quite confident. The atonic condition of the muscular fiber in the alimentary canal, in the coats of the arteries—in the abdominal and respiratory muscles, all clearly indicated this want of nervous power. This striking peculiarity first awakened my suspicion that there was some toxic agent circulating in the blood, and thus weakening the secret springs of life. Had the symptoms of lead-poisoning corresponded with

these notable facts, I should have attributed the difficulty to that cause.*

I am, by no means, unobservant of the fact that these nerve centres are, especially in this climate, frequently at fault, and seem to constitute one of the first, and most important links in the chain of morbid actions in very many diseases. In a report, as Chairman of the Committee on Practical Medicine, read before the "Military Tract Medical Association," and published in the April number of the *Chicago Medical Examiner*, for 1868, I devoted considerable attention to the importance of the cerebro-spinal and ganglionic systems of nerves in the diseases of Northern Illinois.

In this report will be found enunciated views, which seem peculiarly applicable in this connection. The importance of the subject must be my excuse for repeating them here.

When the nerve centres presiding over nutrition, digestion, and the intestinal secretions generally, from *any cause* (and they are subject to be sympathetically modified in their molecular actions by the slightest and most varied impressions upon any portion of the body) become too much depressed, irritated, or *in any way* so modified in the delicacy of their normal structures as to unfit them for furnishing the stated necessary nervous supply, *disordered digestion is the result*, either diarrhœa or constipation." Again, I quote from the same report: "When the nature and *modus operandi* of these delicate structures are better understood in maintaining the *solidarity* of the whole human economy, the part they play in the delicate processes of innervation, sensation, digestion, secretion, elaboration, nutrition, calorification, growth, extension, and repair, respiration, disintegration, excretion, locomotion, and ratiocination, we may begin to conceive something of the importance and magnitude of this intricate subject."

Again: "When it is borne in mind that, in this climate, especially, the *onus* of disease is often thrown upon these struc-

* That inflammation in a muscle is quite competent to arrest its power of contraction, many familiar examples might be given, aphonia in laryngitis is one good illustration.

tures, and that it is in these nerve centres that the *nerve force* is correlated into *cell action*—*cellulation*: (the primal and fundamental process of all organized structures,) secretion, etc., that it is here, indeed, that the nerve force *seems* to be generated, and that the nerve centres *altogether* preside over every physical phenomena in the body, it will not seem so strange that even *slight molecular changes* in these delicate tissues should crop out in grave and formidable symptoms of disease; and, more especially still, when it is remembered that these nerve centres *first* feel the noxious or depressing effects of any toxic agent in the circulation, that they, more than any other organ of the body, therefore demand for their normal action pure, oxygenated blood, and healthy food, free from any deleterious agents, we shall be able to understand why they are so frequently at fault." Hence it will be seen, I hope, that there is no inconsistency in the hypothesis of a *perverted* action of these nerve centres, even though we may not be able always to designate the precise cause of the perversion.

Should it be decided, however, after all, that Dr. McElroy is correct in his opinion of the principal agency of lead in the case reported, then will it appear still more probable, in the light of all the phenomena in this case, that Dr. Abercrombie is right in his view of the pathology, and Dr. Copeland, in the *modus medendi* of alum in the cure of lead colic; and that all the other eminent pathologists cited are mistaken.

However this question may be viewed, it is an interesting subject of inquiry; and with the ultimate decision I shall be content.

ARTICLE XLIV.

KERATITIS.

By F. K. BAILEY, M.D., Knoxville, Tenn.

I was called, March 31st, 1869, to go into the country two miles, to visit a woman who had been suffering from diseased eyes for some time, and had been treated by a quack pretender.

In the morning, she had taken some medicine, the effects of which alarmed the family. Found the patient a young married woman, about 22 years of age, a native of E. Tenn., and the mother of one child, about 18 months old. Temperament nervous, lymphatic, light hair and complexion. Just arousing, so as to speak, I entered the room. Found that she had taken opium. Made no further examination than to be satisfied that she would recover from the overdose, and merely learned that she had suffered from an affection of the eyes for some months.

April 8th. Mrs. H., above mentioned, called upon me, at my office, requesting that I should treat her case. Found her pulse feeble, and the extremities cool. Face pale; tongue clean, but flabby. Bowels not constipated, for the reason that she had taken calomel and other cathartics, with a view "to regulate the system." She had not been allowed to eat hearty food, and having no desire for any other, she had been poorly nourished, with a free secretion of milk added as a drain upon the strength. Suspected a strumous diathesis. Besides, I was informed that an older brother was nearly blind from disease of the eyes, contracted while a soldier in the late war. On examination, I found considerable thickening of the cornea, at its upper portion, in the left eye, with a general cloudy appearance, approaching opacity. The sclerotic coat slightly congested. Photophobia severe.

The right eye presented a similar appearance, but to a less degree painful, with no infiltration in the cornea. The same cloudy appearance was seen, however, as though this was only a little late in taking on a condition like the other. There was indistinctness of vision, and in cloudy weather she found it difficult to read.

Considering it a case of debility, I advised the use of the following mixture:—

R. Syr. Sarsa. Comp., -----	℥ij.
Liquor Iodidi Ferri, -----	℥ss.
Potassii Iodidi, -----	℥ij.
Sulphatis Cinchonæ, -----	℥j.
Syr. Zinziber, -----	℥j.

M. Sig. Teaspoonful at each meal. No local applications, but pure water. To wean the child.

15th. Patient called. Found the appearance of the eyes unchanged, but the general health improved. To continue the mixture.

28th. Patient called, when I found her much improved. The opacity disappearing. Less congested appearance of the eyes. No pain, but still complains of weakness of vision and some intolerance of light. There is an inability to raise the upper lids, giving a drooping appearance to the eyes. Suspended the mixture, and prescribed as follows:—

R.	Sul. Quinine,-----	℞j.
	Ferri Iodidi,-----	℞j.
	Ext. Nucis Vomice,-----	grs. x.

M. F. Pill, No. 20. Sig.; one at each meal.

May 25th. Mrs. H. called, when I found all appearance of opacity gone and the sight much improved. No pain, and the action of the lids perfect. Pulse much stronger. Looking quite healthy. No appearance of menses. Complains of having ordinary headache at times, which is attributable to lingering debility.

To continue the pills, and to take two grains sub. nit. bismuth, after eating, for a slight uneasiness in the stomach, sometimes felt.

October 14th. Since last report, I have seen the patient occasionally, and she seems to enjoy perfect health. Her eyes are entirely well.

It will be seen that, in this case, constitutional treatment only, was employed. Not even a laxative was prescribed.

The object in reporting it was, to make it a theme of some observations upon the prevalence of scrofula in this region of country. This woman had been healthy, till, by some cause, inflammation of the eyes occurred. Instead of being confined to the conjunctiva, the cornea became affected. There was every reason to believe that, if medication of an appropriate character had not been adopted, destruction of tissue would have resulted, or deposition of lymph in the laminæ of the

cornea, causing total loss of sight. The constant drain upon the strength, caused by secretion of milk, and the antiphlogistic course followed by the first doctor, reduced her very rapidly. The rapidity with which the morbid deposition in the cornea was removed, after commencing tonic treatment, shows how important it is to guard the system against every cause which tends to disorganization of tissue.

The brother above mentioned came to me in September last, for biennial examination, as a pensioner. He is laboring under opacity of the cornea of both eyes. At some points, the infiltration is so thick as to cause protrusion. Vision in one eye is totally destroyed and nearly so in the other. The disease commenced with ordinary conjunctivitis, but being of a strumous diathesis, the fibrous tissue became affected, almost immediately.

With a view of improving the general health and the prevention of destructive ulceration, more than any hope of restoring the eyesight, I prescribed this man as follows:—

Ry.	Liquor Iod. Ferri,-----	℥j.
	Iod. Potassii,-----	℥ss.
	Aqua Puræ, } aa,-----	℥ij.
	Syr. Zinzibins, }	
	Essence Cinnamon,-----	℥j.

M. Sig. Teaspoonful *mane et nocte*. Also—

Ry.	Hyd. Bi-chloridi,-----	grs. ij.
	Sul. Quinine,-----	℥j.
	Ext. Conii Mac.,-----	℥j.
	“ Gentian, q. s.-----	

M. F. Pill, No. 40. Sig.; one at night.

Saw him a few days since, and some improvement in the appearance of the eyes. Less pain on exposure to a strong light, and more ability to open and control the lids. During the last summer, I was consulted in the case of a young sister of the same family, but nine years of age.

She had no appearance of disease of the eyes, but there was the same drooping and uncertain look, commonly seen in feeble persons. There was increased sensibility to light. While quite a child she had rheumatism, and for five years she has had pal-

pitiation, with dyspnœa, on exertion, and constant pain in the cardiac region. The left side of the chest is much the fullest, and all the physical signs of hypertrophy. There was also fullness of the abdomen, with every indication of enlargement of the mesenteric glands. Anthelmintics being always in order here among the children, gave santonine and hyd. cum. creta, with the effect to bring away a number of round worms. Then followed with iod. potassii, iod. of iron, and sul. quinine, with the effect to show a decided improvement in the general health.

She is now able to attend school, and, with the exception of the cardiac troubles and the tumid abdomen, is well. Nothing but a judicious course of tonics will prevent her from filling an early grave, from strumous disease of the mesentery. Should inflammation occur in the eyes, from any cause, disease of the cornea would, doubtless, result at once. This family are by no means of the class known as "*poor whites*." They suffered from privations during the war, but since 1864, have lived comfortably on a farm. If, then, we find a tendency to struma in a family such as this, what may we not expect to see in that class who subsist mostly upon "*hog and hominy*," and destitute of good shelter, as well as of proper food, are exposed to the numerous causes of disease. But I have extended this communication further than was first anticipated.

ARTICLE XLV.

REMOVAL OF A HORSE-SHOE PESSARY FROM
THE FEMALE BLADDER

By W. H. BYFORD, M.D., of Chicago.

Reported by B. T. BUCKLEY, MD., Freeport, Ill., President of Stephenson Co. Med. Soc.

On the night of the 28th of February last, was called to visit Mrs B., a young married lady, residing about two miles from the city. Found her suffering severely from pain in the region of the bladder. She informed me that her father's family physician had visited her on that day, and, after an examination, told her that she was laboring under antversion of the uterus,

and that it would be necessary to introduce some instrument to keep the organ in situ. Her physician, being in very poor health, was taken worse at this visit (and it was the last one he ever made), went home, took to his bed, lingered about five weeks, and died. Apprehending that there was some retention of urine, I introduced the catheter, but found the bladder empty, or nearly so. Examined the vagina, but found no pessary. There was slight prolapsus, with anti-flexion. She had become pregnant just previous to this occurrence; and I supposed that these paroxysms of pain were the result of increased sensibility of the uterus and urinary organs, consequent upon partial displacement, and such as we sometimes meet with in cases of recently married women, without any displacement of the uterus whatever. I visited her two or three times a week, for a short time, without any benefit. Drs. DePuy and Mease were called in consultation. After receiving a history of the case, and making an examination, concurred in my opinion or diagnosis of the case. I carried out the suggestions as to treatment, made by the consulting physicians, a short time, without any improvement. The paroxysms became more frequent and severe. By this time, the patient was suffering from constipation, dysuria, and more or less tenesmus. The uterus had passed down considerable below its normal position. I several times attempted to put her under the influence of chloroform, for the purpose of making a more thorough examination, but the effect upon the patient was so distressing, that I was compelled by patient and friends to desist. She gradually grew worse; the symptoms became somewhat alarming from almost constant pain. Dr. J. B. Lyman, of Rockford, was called as additional counsel. She now consented to the use of anæsthetics, and, accordingly, was put under the influence of chloroform. Dr. Lyman introduced a sound into the bladder, and, by digital examination, ascertained that there was some foreign substance in that viscus; and we came to the conclusion that it was a pessary. Upon further consultation, the patient was allowed to rest for the night, and Dr. Wm. H. Byford, of Chicago, was sent for, who, without much difficulty, effected its extraction.

There were present Drs. Lyman, DePuy, Mease, and myself. The patient was placed under the influence of chloroform, and another thorough examination made. The removal was accomplished by dilating the urethra, and extracting it with forceps. The little finger of the left hand was first passed into the bladder, and search made for the instrument, but it was beyond reach of this member. The forefinger of the left hand was next introduced, and the pessary could be felt so remote as to make it impossible to seize hold of it or exactly determine its position. The bladder contained several ounces of urine, and the instrument was easily displaced by the motion of the finger. After the urine was drawn off by a catheter, the index-finger was again inserted into the bladder, when, in consequence of the contraction of that organ, the pessary was brought down close to the pubis, at the opening into the urethra, and was easily controlled. By the forefinger, the pessary was drawn close up to the urethra, with the open end at the right hand of the operator, and the end of one of the branches placed as nearly as possible to the entrance of that canal. Ricord's phymosis forceps was next passed into the bladder, the end of the bar seized, and extraction commenced; but very soon the hold upon it gave way, and the instrument returned to its old position. It was again properly placed by the introducer's index-finger, and a second time taken hold of by the forceps. The bar was easily drawn out this time to the external orifices of the urethra, and by turning strongly down toward the vaginal opening, one-third of the instrument showed itself, and the balance quickly followed.

The time occupied by the efforts at extraction was about ten minutes. All present were surprised at the ease with which the fingers were passed through the urethra and the dexterity of the manœuvre that brought that disagreeable occupant of the bladder to light. As before remarked, the patient was a young married woman, and the genital organs were of virgin, etc., while the pessary was tolerably large. It measured one and three-quarters inches, across from one side to the other, and was two inches and a-half long. The diameter of

the rod was three-eighths of an inch. The extracted instrument was incrustated with the urinary deposits pretty much all over. It had been in the bladder about three months. The patient promptly recovered, with no treatment, save the use of some light anodynes, and is progressing favorably in her pregnancy.

There can be no doubt, now, that this pessary was introduced into the bladder by mistake, instead of the vagina, which, I think, might very easily be effected. The physician, who was a man of experience, and had used the pessary frequently before, was sick, and laboring under the effects of opium, to such an extent as to be easily confused; and, in fact, though the pessary had disappeared, so that he could not find it, was entirely unable to account for its loss. Dr. H. R. Storer, of Boston, records the only other case, so far as I am informed, of this singular accident, and gives a very graphic description of the difficulties he met with when extracting it, in the *Medical Record*, of July 15th, 1868. Dr. H. W. Jones, of Chicago, a short time since, saw a case in which the pessary was accidentally introduced into the rectum, instead of the vagina.

ARTICLE XLVI.

THE SUM AND SUBSTANCE OF ANTISEPTIC
SURGERY.

By E. ANDREWS, M.D., Prof. of Principles and Practice of Surgery,
Chicago Medical College.

There are many practitioners whose time and opportunities have not enabled them to give carbolic acid, and its kindred agents either a careful trial or full investigation by reading, and who, consequently, do not know how much is truth, and how much is error in what is said on the subject. This article is intended to supply a want by making a condensed statement of this part of surgery. First, then,

WHAT WILL CARBOLIC ACID ACCOMPLISH?

Carbolic acid, creasote, sulphurous acid, permanganate of

potash, and all the other poisons, which destroy animalcular life without too much irritation to human tissues, act in the same manner, and produce similar results. Carbolic acid being most used, is, however, here taken as the type.

1. In compound fractures of the most aggravated character, it prevents almost absolutely all suppuration, and most of the soreness and swelling, causing large lacerated openings to go through their process of healing, without any unpleasant smell, and often without the formation of a spoonful of pus.

2. Lacerations and compound fractures laying open large joints, such as the knee, are often healed by it without suppuration, and without exhaustion. Lacerated flesh wounds follow the same law.

3. Lumbar abscesses, and other large collections of pus, opened under a carbolic acid covering, close again by first intention, and after the pus is evacuated, the cavity ceases to produce any more, secreting only a clear bland serum. Meanwhile, the patient, instead of falling into hectic in the usual manner, grows fat and strong, and ultimately recovers.

4. Fistulas communicating with carious bone, may be often healed permanently, without operation, the suppuration ceasing, and the granulations first firmly enclosing the dead bony spicula, and then effecting their removal by absorption. This is, perhaps, the most surprising of the effects of carbolic acid.

5. In surgical operations it may be used to promote union by first intention, and to prevent erysipelas, pyæmia, and other septic forms of disease.

WHAT IT IS.

Carbolic acid (formerly called phenic acid) is a hydrocarbon obtained from coal tar. It can scarcely be termed a true acid, its acid properties being almost nothing. It more properly belongs to the class of alcohols. When pure it crystalizes. It coagulates albumen, and acts as a slight caustic on the tissues, being in that respect rather feebler than nitrate of silver.

DIFFERENT FORMS.

When the crystals are mixed with 5 per cent. of water, they deliquesce and form a permanent fluid. If more water be

added it will not mix, but floats on the top, taking up into solution only about 6 per cent. of the acid. If the two solutions are shaken together, they soon separate again, the lower one containing 95 per cent. of the crystalized acid, and the upper about 5 per cent. The upper solution is the one generally to be used for injecting abscesses, etc., the lower one being too strong. There are no official names for distinguishing these three forms of the medicine, and hence the manufacturers give them all sorts of titles. The only reliable way is to buy the crystals, and prepare the solutions by adding water.

THE THEORY OF ITS ACTION.

The atmospheric air always contains, floating as dust in it, a great number of vegetable and animalcular germs, which light upon exposed organic fluids, and multiplying by millions hourly, convert the organic material into a putrifying mass. If the germs be wholly excluded, it is found that putrification does not occur, even though warmth and moisture both are present.

Prof. Lister maintains that these putrefacient animalcules are the cause of putridity and irritation, and that the irritation causes the suppuration, and hence, that when no other strong cause of irritation is present, the effusion of pus from any raw tissue may be wholly prevented by simply applying carbolic acid, and killing all the animalcules, and preventing the access of any new ones.

HOW TO USE IT.

Prof. Lister uses rather complex methods, which can, by no means, be carried out easily by American surgeons, outside of the large cities. During the past year, I have devised various ways of simplifying the applications, with excellent success; and I am glad to see by late European advices that he himself is now resorting to some of the identical modes which I had planned independently.

I have found the following three preparations the most convenient:—First, take about one ounce of the crystals, or of the 95 per cent. solution, which is nearly as strong, and agitate it in a bottle, with 10 or 15 ounces of water; allow it to settle a few minutes, and the clear 5 per cent. solution will appear at

the top, and the surplus of acid will settle to the bottom, in the form of the 95 per cent. solution. Also, take about one ounce of the crystals, or of the 95 per cent. solution, and dissolve it in any oil. The best is a pure quality of castor oil, both because it has more viscosity, and is, therefore, better for dressings, and because it will dissolve the 95 per cent. solution of the acid completely, making a perfectly bright, clear compound, which is elegant in its appearance. Other oils precipitate the 5 per cent. of water, in the form of an emulsion, which gives them a dull look. Finally, take eight parts of collodion, and mix them with one part of carbolic acid. We are now armed with three preparations, *viz.*: the carbolated water (5 per cent. solution), the carbolated oil, and the carbolated collodion, and are prepared for action.

TREATMENT OF COMPOUND FRACTURES.

The fracture being adjusted and splints applied, the wound should be washed to its remotest corner, with the 5 per cent. solution, using a syringe, if necessary, to throw it fully into deep parts. This will kill all the animalcular germs present in the wound. The next step is to prevent the admission of any more. For this purpose, take a pledget of lint or cotton batting, large enough to fill the wound, if it is open, or to more than cover the orifice if closed, and lay it in or on, as the case may be. If elegance is sought after, a piece of tinfoil or oiled silk may be placed over the lint, to prevent the oil from soiling the outside dressings. Finally, confine the whole in place with a roller, or with a Mayor's handkerchief. The next day, the injection and dressing must be gently repeated. It should be observed, that new wounds and freshly opened abscesses, whose raw nerves are not yet covered with granulations, often feel the smart of the first wash severely. If so, the second wash may be reduced to one-third strength, gradually increasing again to 5 per cent., or 20 grs. to the ounce. Under this treatment, frequently there is not an ounce of pus secreted during the whole cure, and the bone often unites as promptly as in a simple fracture, an important gain, as all know how prone compound fractures are to slow union.

LUMBAR AND OTHER LARGE ABSCESES.

These large collections of pus, which often destroy the patient soon after they are opened, may generally be rendered surprisingly harmless in the following manner:—Dip a trochar in carbolated water, and thrust it obliquely into the abscess, so as to make a valvular opening. Let the pus flow as long as it will, or press it gently out, but do not allow a particle of air to regurgitate through the canula, as that would introduce animalcular germs. When the pus ceases to flow, dip a few fibers of cotton batting into the carbolated collodion, lay them over the point of entrance to the trochar, then placing the thumb on the end of the canula, or a cork in it, to prevent any regurgitation of air, draw it out from under the collodionized cotton pressing, the latter, instantly, upon the orifice, to prevent the admission of living germs. In this way, the orifice will be sealed, and a union, by first intention, usually obtained. After a week or more, the abscess will generally be found filled again, when it should be again tapped in the same way. The pus will now be found thinner and more serous. After a longer interval, a third tapping will find the pus almost transparent, and the fourth one often will draw absolutely transparent serum. In this way, the intervals will lengthen, and the abscess, at least, in many instances, be gradually made to wither away and disappear, the patient all the while growing fat and rosy, and presenting a total contrast to the usual results of a lumbar abscess. Sometimes the abscess is clogged with masses of dead areolar tissue, so that it is impossible to evacuate it through the canula. In this case, it may be still possible to draw them out through the tube by slender forceps, dipped before each insertion in carbolated water, or oil; but if this fails, or if the collodion does not produce a union by first intention, or if it has been already opened before coming under treatment, a different method is necessary. We must now proceed by injections. For this purpose, use a 1 or 2 per cent. solution, the first few days, gradually increasing to five per cent., or 20 grs. to the ounce, as the patient becomes used to it. This must be thrown in once a day, filling the abscess

completely. Then allowing the solution to run out, a large pledget of cotton, dipped in carbolated oil, must be placed over the fistula, and confined by a bandage. It will be the neater and better if a piece of druggist's tin-foil is placed between the cotton and the bandage. This dressing must be repeated daily. Frequently the flow of pus will continue, gradually diminishing for one, two, or three weeks under this treatment; but it will be almost always brought under control, and the abscess at length discharge only a little transparent serum, without any odor. This may continue many months, but the patient is saved from hectic, grows fat and vigorous, and his life is commonly saved.

CARIOUS JOINTS.

Prof. Lister claims that carbolic acid will heal up a fistula over necrosed bone, and cause its absorption. In my own practice, I have been able to do this, where the sequestrum was of cancellar tissue, or a fragment of compact tissue, of small size; but large fragments of compact bone, two or three inches long, have, in my hands, resisted the treatment, and required operation. The principle appears to be this:—Cancellar bone, if suppuration be suppressed by the injections, becomes permeated with the granulations which hug close to all the little spiculæ, and being in absolute contact, effect their absorption; but large compact fragments cannot be thus interpenetrated with living granulations, and hence their absorption, if accomplished at all, would, probably, be too slow to be waited for. At any rate, such is my experience up to the present time. The smaller joints do admirably under the daily carbolated injections and dressings. I have repeatedly healed them up in a complete and permanent manner, after the probe showed the articular surfaces of the bones to be thoroughly carious. Ankylosis, of course, occurs. Finger-joints may be often healed in two weeks, but larger ones require much more time. I have an elbow whose articular surfaces were perfectly carious, six months ago; the limb was swollen and red, discharging large quantities of stinking pus, and the patient was emaciated, cadaverous, and hectic. Under the antiseptic dressings, he has grown plump and vigor-

ous, the swelling has all disappeared, and the skin resumed its natural whiteness. For three months, I have been unable to find any dead bone with the probe, and there is no discharge of pus, yet the fistulas are still permeable to the probe, and probably will not close under several months more.

Wounded and carious knee-joints can often be treated with splendid success in the same way, compared with the disasters which used to follow these conditions. I have one now on hand which does not discharge a teaspoonful of pus in a week, and the patient will save both his life and his limb. I have seen one compound fracture, penetrating the knee, thus treated, where the joint did not even inflame, and was not ankylosed. Some carious knees, however, are too extensively diseased to admit of final cure, and the antiseptic treatment is only useful to arrest exhaustion, and enable the surgeon to get them up to a condition vigorous enough to bear an operation. The abscesses of hip-disease often respond admirably to the same treatment.

INCISED WOUNDS.

Wash the wound thoroughly to its remotest recesses with the carbolated water, then close it with sutures, and add adhesive straps or carbolated collodion. If the straps are used, a pledget of lint, dipped in carbolated oil, should be laid over the wound and covered with tin-foil and bandages. In this way, union by first intention is greatly promoted, and the risk of erysipelas almost absolutely annihilated.

If any one, however, supposes that carbolic acid is infallible, he will be disappointed. Many particular cases occur where it partly fails of its end. In these instances, it will often be found that a solution of one part of the officinal sulphurous acid to two parts of water does better. Solutions of permanganate of potash, two grains to the ounce, sometimes do well; and, in the same manner, other antiseptic solutions, if used in sufficient strength, occasionally succeed. Many persons miss entirely the effects of the antiseptic treatment, because they are inefficient in its application. If they do not effectually destroy every animalcule in the abscess or wound, and absolutely bar

out the access of every new germ in the living state, they accomplish nothing. The washing and injection must be thorough, and the carbolated outside dressings must cover the whole orifice and its vicinity. When these principles are observed, the success is wonderful.

On the whole, it must be acknowledged that the use of carbolic acid has revolutionized certain branches of surgery, and enables us to save many limbs and lives which would formerly have been lost. I would advise no one to make a hobby of it, but that it is a remarkable addition to the resources of our art is a fixed and undeniable fact.

The Clinic.

COOK COUNTY HOSPITAL.

ANEURISM OF AORTA,

WITH NOTES OF A CLINICAL LECTURE, BY PROF. H. A. JOHNSON,
ATTENDING PHYSICIAN.

By WM. E. QUINE, M.D., House Physician.

History.—Jeremiah C., *æt.* 46, Ireland, blacksmith; admitted Sept. 30th, 1869. Has been more or less subject to rheumatism during the last twelve years. One year ago, complained of pain in both mammary regions, which (four months later) was accompanied by dysphagia, dyspnoea, sore throat, hoarseness, incessant cough, and copious frothy expectoration. To these symptoms, which are rapidly increasing in severity, there is now added anorexia, great feebleness, and profuse diarrhoea.

Examination—Inspection.—Moderate emaciation, lividity of skin, features expressive of great anxiety, remarkable prominence of third, fourth, and fifth right costal cartilages, elevation of left shoulder, and diminished respiratory movements of left side.

Mensuration.—Circumferential measurements of left side, a half inch greater than of corresponding regions of right.

Palpation.—Vocal fremitus exaggerated on right side, absent on left. Left intercostal depression on inspiration. Prolonged heaving impulse against third, fourth, and fifth right costal cartilages, coincident with ventricular systole. Apex of heart beats two inches below, and one inch outside left nipple.

Percussion.—Volume of resonance of left side increased. Percussion note of right infra clavicular region is of higher pitch and less intensity than natural; over third, fourth, and fifth, right costal cartilages flat; and over remainder of right side, natural.

Auscultation.—In right infra clavicular region the inspiratory murmur is irregular and jerking, and the expiratory prolonged; in remainder of right chest, puerile respiration. Over left side, respiratory murmur is absent, except during forced inspiratory efforts. Vocal resonance diminished on left side; increased on right. Friction sounds, coincident with both sounds of heart, are heard at its apex, and above notch of sternum. A low, musical, prolonged murmur, heard best over second, third, and fourth right costal cartilages, and not at all in back, follows immediately the second sound of heart.

NOTES OF CLINICAL LECTURE BY PROF. JOHNSON, OCT. 5TH, 1869.

Diagnosis.—The history and physical signs point to a lesion of thoracic viscera, which interferes with performance of their functions. What is its nature? Is absence of respiratory murmur in left lung due to tuberculous or cancerous infiltration, or to fluid in pleural cavity? No. Because this lung is even more resonant than the other. Is it due to occlusion of trachea, or of left bronchus? Cannot be trachea, because right lung performs its function. Must be bronchus. Is this occlusion caused by foreign body within bronchus, or by pressure upon it. Must be pressure upon it; because by forced efforts left lung can be inflated, and such efforts would cause foreign body to become more tightly wedged, and the more perfectly prevent entrance of air. Is the prominence of right costal cartilages, due to displacement of heart by emphysema of left

lung, or by fluid in left pleural cavity, or by ascites, or an abdominal tumor? No. Because apex of heart is further to left of sternum, and lower than natural. Is the heaving impulse against right costal cartilages due to hydrops pericardii, or hypertrophy of heart, with dilatation? No. Because, as in first instance, there is no diffuse impulse, and no triangular area of dulness; because cardiac sounds are much louder than natural; and because of heaving impulse to right of sternum. A heart does not generally dilate in this direction, and never attains this magnitude. Therefore, because of the small thready pulse, prominence of right cartilages, pressure upon left bronchus, and œsophagus (all of which are in relation with aorta), and prolonged heaving impulse against right cartilages, with murmur, we are justified in calling this aneurism of aorta.

Causes.—Aneurism never occurs in this region, except as the result of previous disease of arterial coats. Whether the disease consists in the distinct deposit of patches of atheroma, of fat globules in the interstices, or of replacement of fat for normal elements, the natural elasticity becomes lost, proportionately to amount of change. Hence, the artery becomes less able to contract on its contents, and yields to the repetition of shocks which it sustains by ventricular contractions. Rheumatism, and gout, very frequently precede aneurism, and it is a question in this case whether the dilatation is due to a deposit, similar to that which has probably taken place in apex of right lung, and there called tubercle, or to a deposit similar to that which occurs in and around his joints. Age exercises a powerful predisposing influence, as it is rarely met with in childhood and advanced life.

Kinds.—The kinds which usually affect the aorta, are the fusiform, and false sacculated. The first consists not only in equal expansion of all the coats through the whole circumference of the vessel, but there is positive elongation as well. The second consists in a tumor that springs from side of vessel, with interior of which it communicates by a small aperture, and is caused by rupture of one or two of its coats with dilatation of others. Not unfrequently the latter springs from side of

former. Judging from prominence of right cartilages, from evident pressure on left bronchus, and œsophagus, from absence of loud rasping murmur, and well-marked vibration, we have in this case a fusiform aneurism involving the whole arch.

Prognosis.—Is of course grave. Although spontaneous cures sometimes occur in vessels of smaller size, by the gradual deposition of laminated fibrin within sac, which may result in occlusion, it is not to be expected in one of this magnitude, but rather that the patient will finally succumb to exhaustion caused by pressure upon, and consequent interference with, the functions of important parts, or to hæmorrhage, caused by rupture of sac externally, or into trachea, or bronchi, or œsophagus, or pleural, or pericardial cavity.

Treatment.—The most we can hope to accomplish is the palliation of the more distressing symptoms, of the disease and retardation of its progress; and this can be best effected by arterial sedatives to lessen the force of the heart's impulse, so as to diminish pressure upon arterial coats, and nerve sedatives, to diminish sensibility and procure rest. In this case, profuse diarrhœa (probably the peripheral expression of central obstruction to circulation) is an urgent symptom, and also the cough, and dyspnœa.

R_y. Acidi Tanici, -----gr. iij.
Tinct. Opii, -----gtt. x tertia-hora,

and

R_y. Tinct. Verat. Virid. } āā-----gtt. iv.
Acid Hydrocyanici, }

also, every three hours.

Autopsy.—On reflecting the soft parts, there was evident prominence of third, fourth, and fifth right costal cartilages, with no loss of tissue. Tubercle in apex of right lung. Visceral and parietal layers of pericardium firmly adherent. A fusiform aneurism arose from that portion of aorta contained within pericardium, and extended to eighth dorsal vertebra. Tough decolorized fibrin adhered to some parts of the walls, and to others deposits of apparently more recent date, as indicated by the retention of red coloring matter. A large stellate open-

ing from sac into the œsophagus. Stomach distended with dark fluid blood, and friable clots. Part of bodies of sixth, seventh, and eighth dorsal vertebræ absorbed. The heart was hypertrophied, but could not be weighed, as it was kept attached to specimen.

Foreign Correspondence.

R. R. ALLGEMEINEN KRAUKENHAUSE, }
VIENNA, October 30, 1869. }

DEAR EXAMINER:—As has been the case in many instances, it was vacation when I visited Prag, and I was unable to learn many particulars about medical matters. The hospital has about 800 beds, and presents about the same opportunities as Vienna for studying obstetrics and diseases of children. The number of cases is smaller, but there is only about one-fourth the number of students (300).

Prof. Scanzoni and Tröltzsch, at Wurtzburg, attract many admirers. I have heard that one of Scanzoni's assistants is an American.

A reading room has been opened in the hospital, which is supplied with about fifty of the leading medical journals of the continent. The *London Lancet*, and *New York Medical Record* are the only two English journals. Several American journals will be added after the first of January. The rooms are open from 10 A.M. to 11 P.M. The terms of admission are 60 cts. per month.

The hospital here has undergone some changes since I last wrote from here. Many of the wards and rooms have been freshly painted, grained, frescoed, etc., while the whole building has been thoroughly cleaned outside and inside, and presents a much finer appearance than when I went away. Several masons have been at work enlarging the windows, and adding numerous ventilators, which has greatly improved the air in the wards.

Profs. Hebra and Sigmund have recently been made Professors Ordinary, and Prof. Zeisl Primarius Mauthner, formerly Assistant of Prof. Arlt, and one of the best eye teachers in Germany, has been appointed Professor at Innsbruck. There are about thirty American students here, two of whom are ladies. The cost of many private courses is somewhat greater than last year.

I think I will close this letter by a brief reference to tumor cavernosis, as several cases have recently fallen under my observation, and as the best method of treatment still stands in discussion.

Telangiectasie is another species of tumor, which, with the one above mentioned, are embraced under the common name of angiome. By this term angiome, we understand a tumor composed of vessels bound together by connective tissue. Examined microscopically, they present a picture similar to that of the corpus cavernosum of the penis: hence they are often called erectile tumors, as they increase or decrease in size according as they are or are not filled with blood.

Several theories have been advanced as to the manner of development of the tumor cavernosus. For example, one author supposes that the venous capillaries and small veins become enlarged or varicose, until their walls press against each other and become gradually absorbed. Another, that small caverns are formed, first in the connective tissue, and become later, in connexion with the vessels, and that perhaps new blood corpuscles were formed from the cells of the connective tissue, while yet another maintains that the calibre of the vessels is enlarged by the contraction (cicatrix) of connective tissue. Many other similar suppositions might be added. The internal wall of these caverns is generally paved with spindle-shaped cells. Many of these theories would lead us to suppose that the cavernous tumor is the result of inflammation, yet we seldom observe any signs of inflammation in the course of the disease, if I may so call it, and perhaps yet seldomer discover any signs of this process with the microscope. The diagnosis of these tumors is not always easy, as they are often of a fluctuating

feel, and can be mistaken for cysts, abscesses, aneurisms, lipomas, etc.; also, with telangiectosii, when this is not superficial. They ordinarily occur in the subcutaneous tissue, but frequently embrace the muscles, and I think Prof. Schuh states in his pathology that they frequently are developed in the bones, but later writers say this occurs very seldom. I have also seen them in the liver and spleen, and they occur in the kidneys. Of seven cases that I have chanced to see in the last two months, the tumor was situated on the upper lip in two cases, at the inf. angle of the scapula in two cases, and of the other three, one was on the temporal region, another on the cheek, another just above the knee. All were on children, under five years of age, and four on infants.

Prof. Heine, of Heidelberg, has lately written quite an extensive article on "Angioma Arteriale Racemosum." A large per cent. of his reported cases was situated about the head, with a predilection for the ear.

As is well known, telangiectain, or mother-mark, is generally hereditary, and ordinarily the tumor cavernous develops itself in early youth, and may be said also to be hereditary, or the result of a similar diathesis, as they extremely seldom occur in later life, when we most generally see other varicose conditions. As above mentioned, telangiectosii generally affects the superficial, sometimes the deeper tissues. Its course is slow and painless—commonly comes to a standstill—sometimes continues to increase. Billroth saw such a tumor as the first on a boy five years old. The tumor cavernosus is seldom congenital. It occurs most frequently on the face and extremities—less frequently on the body. There is sometimes weakness of the muscles of, or near the part affected, and frequently pain in the region. The tumor cavernosus may become dangerous to life when embracing the muscles and bones. It sometimes becomes greatly reduced in size by thrombus, but a case of complete spontaneous obliteration I am unable to find record of. Various modes of treatment have been tried, such as compression, ligation of the arteries, injection of various substances, removal by knife, galvano caustic, etc. The first two

methods are fruitless in most cases. The galvano caustic is a favorite method with Prof. Billroth at the present time. About a year ago, I saw a patient three years old, in his wards, with a tumor about as large as a hen's egg on the upper lip. Repeated injections of carbolic acid, tinct. iodine, liquor ferri sesqui chloridi, etc., were of no avail. The tumor meantime continued to increase in size. Finally, a wire, armed with a needle, was drawn through the tumor, and the suds attached to the battery. The tumor was thus transfixed in various directions by the wire at white heat. The tumor decreased in size rapidly, and, after one or two repetitions of the process, the child was discharged cured. Removal by knife would have necessitated a plastic and consequent deformity of the face. In other cases, it is sufficient to puncture the tumor in several places with the caustic needle. While in other cases the whole surface of the tumor may be cauterized, and so soon as the slough becomes detached, the process may be repeated, if any traces of the tumor remains. The wound is treated as an ordinary ulcer. By this method there is little or no fear of hemorrhage, which is often a troublesome complication when these tumors are removed with the knife. I may also add, that the galvano caustic is extensively used here in amputating the neck of the uterus in prolapsus, amputating the penis, cauterizing ulcerating epitheliomas, removing polypous tumors, and for other similar operations.

Yours, truly,

F.

COMBINATION OF CHLOROFORM WITH OPIATES FOR THE RELIEF OF PAIN.—Dr. W. Marshall strongly recommends (*Glasgow Medical Journal*, May, 1869) this union of remedies for anodyne purposes. From 10 to 20 minims of chloroform are combined with one or two drachms of compound tincture of camphor (if the pain be moderate), or 10, 20, or 40 minims of Battley's sedative (if it be severe). This generally produces sleep within a few minutes, and its effects are more lasting than those of an opiate alone, and without its disagreeable after-effects. It ought to be given in some thickish solution, such as mucilage; otherwise the chloroform will fall to the bottom.—*The Practitioner*.—*Richmond and Louisville Med. Journal*.

Selections.

PHYSIOLOGICAL ACTION OF THE HYDRATE OF CHLORAL.

Dr. B. W. Richardson made an extremely interesting report on this subject to the Biological Section of the British Association for the advancement of Science, at its recent meeting, from which we make the following extract:—The hydrate of chloral, for the introduction of which into medical practice we are indebted to Liebreich (known for his researches on protagon), is a white, crystalline body, soluble in water, and yielding a solution not very disagreeable to the taste. It is made up by the addition of water to the substance chloral. Chloral, the composition of which is C_2HCl_3O , is the final product of the action of dry chlorine on ethylic alcohol. It is an oily fluid, thin, colorless, volatile. The specific gravity is 1.502 at 64° Fahr., and it boils at 202° Fahr. It has a vapor density of 73, taking hydrogen as unity. The odor is pungent. When chloral is treated with a little water, heat is evolved, and small stellate white crystals are formed as the fluid solidifies. The solid substance is the hydrate of chloral, $C_2HCl_3OH_2O$. The hydrate is slowly volatilized if it be exposed to the air, and the odor of it, were it not pungent, is so like melon as to be hardly distinguishable from melon. When heat is applied to the hydrate, it distils over without undergoing decomposition.

When to a watery solution of hydrate of chloral caustic soda or potassa is added, the hydrate is decomposed, chloroform ($CHCl_3$) is set free, and a formate of sodium or potassium, according to the alkali used, is formed. It was on a knowledge of this decomposition by an alkali that Liebreich was led to test the action of the substance physiologically. He conceived the idea that in the living blood the same change could be effected, and that the chloroform would be liberated so slowly that anæsthesia of a prolonged kind would result. To try this, he subjected animals to the action of chloral, and even man, and proved that sleep could be rapidly induced without the second stage of excitement common to the action of chloroform, when it is given by inhalation. Liebreich produced in a rabbit, by a dose of 0.5 gramme of the hydrate of chloral, a sleep which lasted nine hours. This dose was equivalent to 0.35 of chloral, and to 0.29 of chloroform. The symptoms, he found,

were like those produced by chloroform. In some cases, he gave the hydrate to the human subject. The first case was that of a lunatic, to whom he administered 1.35 gramme. No irritation was set up, and five hours of sleep was obtained. In a second case, he gave internally a dose of 3.5 grammes to a man suffering from melancholia, by which he produced a sleep of 16 hours.

Such, said Dr. Richardson, was an epitome of the facts placed before him at the time when he commenced to make his experiments. In setting out on his own account, he first prepared a standard solution of the hydrate. He found that 30 grains dissolved in 40 grains of water, and formed a saturated solution, the whole making up exactly the fluid drachm. The standard solution prepared in this way was very convenient.

He next proceeded to enquire whether, by the addition of hydrate to fresh blood, chloroform was liberated. This was proved to be the fact; the odor of chloroform was very distinct from the blood, and chloroform was itself distilled over from the blood, and condensed by cold into a receiver.

The narcotic power of the hydrate was then tried on pigeons, rabbits, and frogs. The standard solution named above was employed, and was administered either by the mouth or by hypodermic injection. The action was equally effective by both methods. The general results was confirmatory of Liebreich's own experience to a very considerable extent. They are as follows:—In pigeons, weighing from $8\frac{1}{2}$ to 11 ounces, narcotism was produced readily by the administration of from $1\frac{1}{2}$ to $2\frac{1}{2}$ grains of the hydrate. In these animals, the dose of $2\frac{1}{2}$ grains was the extreme that could be borne with safety, and a dose of $1\frac{1}{2}$ grain was sufficient to produce sleep and insensibility. The full dose of $2\frac{1}{2}$ grains produced drowsiness in a few minutes, and deep sleep, with entire insensibility, in twenty minutes. Before going to sleep, there was, in every case, whether the dose was large or small, vomiting. As the sleep and the insensibility came on, there was, in every instance, a fall of animal temperature; and even in cases where recovery followed, this decrease was often to the extent of five degrees. The respirations also fell in proportion, declining, in one case, from 34 to 19 in the minute, during the stage of insensibility. From the full dose that could be borne by the pigeon, the sleep which followed lasted from three and a-half to four hours. Six hours at least was required for perfect recovery. During the first stages of narcotism in pigeons, the evolution of chloroform by the breath was most distinctly marked.

In rabbits weighing from 83 to 88 ounces, 30 grains of the hydrate were required in order to produce deep sleep and insensibility. A small dose caused drowsiness and want of power in the hinder extremities, but no distinct insensibility.

When the full effect is produced in rabbits from the administration of the large dose, the drowsiness comes on in a few minutes: it is followed by want of power in the hinder limbs, and, in fifteen minutes, by deep sleep and complete insensibility. The pupil dilates and becomes irregular; the respiration falls (in one case, from 60 to 36 in the minute), and the temperature declines 6° Fahr.; sensibility returns with the rise in number of respiratory movements, but, in some cases, falls again during the process of recovery. The drowsiness, or, if the animal is left alone, what may be called sleep, lasts from five and a-half to six hours. But it was observed that the period of actual anæsthesia was very short, lasting not longer than half an hour, after which the skin seemed rather more than naturally sensitive to touch. During recovery, there are tremors of muscles, almost like the rigors from cold; they are due, probably, to great failure of animal temperature.

In frogs, a grain of the hydrate causes almost instant insensibility, coma, and death.

In further prosecution of his research, the author tested, on similar subjects, the effect of chloroform, bichloride of methylene, tetrachloride of carbon, and chloride of amyl. In all the observations with these substances, the narcotizing agent was used by hypodermic injection. It was found, as a result of these inquiries, that seven grains of chloroform, five of tetrachloride of carbon, and seven of chloride of amyl produced the same physiological effect as two grains of the hydrate. Seven grains of bichloride of methylene induced a shorter insensibility. A rabbit subjected to 30 grains of chloroform slept 4 hours and 25 minutes; and a pigeon subjected to 7 grains slept 3 hours and 25 minutes. All these agents caused vomiting in birds, before the insensibility was pronounced, the same as did the hydrate; but in no animal was there any sign of the stage of excitement which is seen when the same agents are administered by inhalation. This fact is most important, as indicating the difference of action of the same remedy, by difference in the mode of administration.

The temperature of the body was reduced by the agents named above, but not so determinately as by the hydrate.

Two animals, pigeons, made to go into profound sleep, the one by the hydrate, the other by chloroform (each substance

administered subcutaneously), were placed together, and the symptoms were compared. The sleep from the chloroform was calmer; there was freedom from convulsive tremors, which were present in the animal under the hydrate, and recovery was, it was thought, steadier. It was observed, and the fact is well worthy of note, that no irritation was caused in the skin, or subjacent parts, by the injection of the chloroform and other chlorides.

The neutralizing action of the hydrate on strychnia was tried, and it was determined that the substance arrests the development of the tetanic action of the poison, for a short period, and maintains life a little longer afterwards, but does not avert death. This subject deserves further elucidation.

When the hydrate of chloral is given in an excessive dose it kills; there are continuance of sleep, convulsion, and a fall of temperature, of full eight degrees, before death.

The *post mortem* appearances were noticed after a poisonous dose. The vessels of the brain are found turgid with blood. The blood is fluid, and coagulation is delayed (in a bird, to a period of three minutes), but afterwards a loose coagulum is formed. The color of the brain substance is darkish-pink.

The muscles generally contain a large quantity of blood, which exudes from them, on incision, freely. This blood coagulates with moderate firmness. Immediately after death, all motion of the heart is found to be arrested. The organ is left with blood on both sides, but with more in the right than in the left side. The color of the blood on the two sides is natural, and the coagulation of the blood is moderately firm. The other organs of the body are natural.

Other observations were made on the changes which the blood undergoes when the hydrate of chloral is added to it. The corpuscles undergo shrinking, and are crenate; and when excess of hydrate is added, the blood is decomposed in the same way as when treated with formic acid. The summary of the author's work may be put as follows:—

Hydrate of chloral, administered by the mouth or by hypodermic injection, produces, as Liebreich states, prolonged sleep.

The sleep it induces, as Liebreich also shows, is not preceded by the stage of excitement so well known when chloroform is administered by inhalation.

The narcotic condition is due to the chloroform liberated from the hydrate in the organism, and all the narcotic effects are identical with those caused by chloroform.

In birds, the hydrate produces vomiting in the same manner, and to as full a degree as does chloroform itself.

The sleep produced by hydrate of chloral is prolonged, and during the sleep there is a period of perfect anæsthesia; but this stage is comparatively of short duration.

The action of the hydrate is (as Liebreich assumes) first on the volitional centres of the cerebrum; next on the cord; and, lastly, on the heart.

Practical Applications.—Whether hydrate of chloral will replace opium and the other narcotics is a point on which the author was not prepared to speak. It is not probable that it will supercede the volatile anæsthetics, for the purpose of removing pain during the performance of surgical operations, but it might be employed to obtain and keep up the sleep in cases of painful disease. This research had, however, led to the fact that chloroform, when injected subcutaneously, in efficient doses, leads to as perfect and as prolonged a narcotism as the hydrate, with an absence of other symptoms caused by the hydrate, and which are unfavorable to its action. This was a new truth in regard to chloroform, and might place it favorably by the side of the hydrate for hypodermic use. Lastly, as the hydrate acts by causing a decomposition of the blood, *i.e.*, by undergoing decomposition itself and seizing the natural alkali of the blood, it adds to the blood the formate of sodium. How far this is useful or injurious remains to be discovered. But while putting these views as to practical application at once and fairly forward, Dr. Richardson said, it was due to Liebreich to add that his (Liebreich's) theory and his experiments have done fine service in a physiological point of view. They have shown in one decisive instance that a given chemical substance is decomposed in the living body, by virtue of pure chemical change, and that the symptoms produced are caused by one of the products of that decomposition. The knowledge thus definitely obtained admits of being applied over and over again in the course of therapeutical inquiry.—*Med. Times and Gazette.*—*Am. Jour. of Dental Science.*

TREATMENT OF ANEURISM BY IODIDE OF POTASSIUM.

In Vol. 1, p. 253, of the *Gazette*, we reported 12 cases successfully treated. In the *Edinburgh Medical Journal*, for July, 1869, Dr. Balfour, of the Edinburgh Royal Infirmary, adds 11 additional cases, and says, that in all of them, there has been such a measure of success, as justifies him in saying

this treatment holds out an excellent prospect of relief, and even of cure. He knows that spontaneous abatement occasionally takes place without any real improvement; but in all his cases, not only relief, but positive improvement was obtained in every instance. And he thinks that there are many facts which tend to prove that iodide of potash is not only curative in aneurism already developed, but that it also acts remedially and prophylactically in the aneurismal diathesis.

ANEURISM OF THE AORTA.

CASE I. Had been under observation for twelve months; the aneurism was reduced under treatment to a dull thud, in the second intercostal space, but no pain or uneasiness was complained of. The patient was able to tend shop.

CASE II. Aneurism of the abdominal aorta had remained quite well for more than a year after treatment.

CASE III. Aneurism of the innominata, implicating the carotid and subclavian arteries. There was also an aneurism of the abdominal aorta, and a general aneurismal condition of the arteries. He remained comfortable for many months after treatment. His abdominal aneurism could be felt as a hard, firm knot, much diminished in size; his innominate aneurism now never troubles him, but it is not absolutely consolidated, neither is it any longer a true aneurism; for it is restored to the condition of an elastic artery, enlarged fusiformly, of course, but no longer bulging as it formerly did, as a pulsating globular tumor stretching across the trachea.

CASE IV. Was an aneurism of the aorta, in a man aged 46. There was a large pulsating tumor to the right of the sternum, extending from the third to the seventh rib, and projecting fully one inch and a-half above the level of the ribs. Part of the tumor was solid; but all below the centre was soft and pulsated fluidly. The dullness extended fully five inches all around the centre of the tumor. He had intense dyspnoea, amounting to orthopnoea, violent, harassing, dry cough.

His food and drink were restricted in quantity; a belladonna plaster was put over tumor; 15 minims of chlorodyne were given every half hour to quiet his cough, and one tablespoonful of a solution of one-half ounce of iodide of potash in six ounces of infusion of *chiratae*, was given in tablespoonful doses, three times a day. The patient was relieved in 48 hours and much improved in two months; the cough became very troublesome from time to time, but was relieved by the following prescription:—

R. Morphiæ Hydrochlor,-----	gr. j.
Acid Hydrochlor, dilut.,-----	m. v.
Acid Hydrocyan,-----	ʒss.
Syrupi Scillæ,-----	ʒj.
Aquæ Font,-----	ʒj.

Given in teaspoonful doses every two or three hours.

Paralysis and loss of pulse in the left arm occurred and passed away. A violent serous diarrhœa was relieved by acetate of lead and opium, in small doses, without stopping the use of the iodide.

After five months treatment, the improvement was quite remarkable. The pulsation was very much lessened; the tumor was perfectly solid in every part and visibly decreased in size. The patient was still kept in bed, and the iodide of potash treatment still continued, in the hope of seeing the complete disappearance of this large tumor. But the patient obtained liquor on the sly, and relapsed; still, at the end of nine months, the tumor was considerably reduced in size, the cough was all gone, and the patient, although emaciated to a skeleton, was able to walk out daily.

CASE V. Was one of aneurismal dilatation of the aorta. The patient (aged) had suffered for 16 months with severe pain across upper part of sternum, and breathlessness. There was dulness on percussion across the whole of the upper part of the breast-bone. There was a pulsating tumor deep in the tracheal fossa, and a double bruit, extending up into the left carotid. Six drachms of iodide of potash were dissolved in six ounces of infusion of chiritæ, and a tablespoonful given three times a day. The patient was kept in bed, and his food and drink restricted. He was quickly relieved; and in a fortnight the rasping bruit was softened, and the pulsation much lessened.

CASE VI. Was one of aneurism of the aorta, which, taken singly, would attract much attention, but is remarkable as one of a series.

The patient, aged 40, had suffered for twelve months with a severe and constant aching pain in the chest. His breath was short and wheezing; cough troublesome, choking feeling on stooping, difficulty in swallowing solid food, pulse at left wrist almost imperceptible. There was a distinct bulging on the upper part of the left side of the chest, most marked over the second rib, and second intercostal space, also decided impulse, and dulness from the clavicle to within two inches of the nipple, over which a double blowing murmur was to be heard. There was also enlargement of the heart and valvular disease.

Pain and sense of choking prevented the patient from sleeping. Two drachms of iodide of potash were dissolved in six ounces of water, and two tablespoonfuls given three times a day, with chlorodyne, ether, and morphine injections, etc., to relieve the cough. In the course of six months, after much suffering from pain and cough, he was materially better, the breathing was easier, cough and expectoration almost gone; but slight fatigue or exposure to cold would bring them back again, and, at one time, there was complete loss of pulse in the left arm, with coldness and excruciating pain, the expectoration became copious, purulent, and bloody. He recovered from this, and during the whole of the next nine months continued to take two drachms of the iodide daily, with the exception of twice, when it caused pain, vomiting, and gastric irritation.

It was not till the end of 18 months that the tumor seemed sufficiently consolidated to allow the patient to get out of bed; and then, although he looked well and healthy, one drachm of iodide of iron was added to his medicine. There was great dulness on percussion of the chest, the sternal ends of both clavicles were dislocated, there was considerable puffiness and enlargement of the veins of the chest, a solid mass could be felt in the tracheal fossa, behind the sternum, over the left subclavian there was a solid tumor, pulsating not very forcibly, and only with a movement of elevation, but more of dilatation, over which no bruit could be heard, but only a dull thud. The patient had no difficulty of breathing or swallowing, could go up and down stairs and walk about, no cough, and aneurism evidently consolidated or consolidating. Dr. Bennett was also satisfied with the reality of the improvement.

CASE VII. Aneurism of the aorta in a man aged 22, had lasted nine months, attended with harassing cough and copious purulent expectoration, severe pains in left side of chest and neck, and in the left arm. Pulse 110; heart normal; between second and third left ribs, there was a conical elevation, one inch and a-half long, rising half an inch above the level of the ribs, pulsating fluidly, with thin walls and distensile action. Dulness on percussion, extending from the first rib down toward the sternum, and over this space a pulsatile wave passed from right to left, attended with a tolerably loud and well-marked bruit.

The belladonna plaster, morphine mixture, and iodide of potash, one drachm to the ounce of water, was used in one-half ounce doses, *i.e.*, 30 grains per dose, three times a day. The pain ceased in a few days, in a month the cough was all gone,

his breathing easy, and he comfortable. In a month more, the cough and expectoration had entirely ceased, and the patient thought himself cured. But the pulsating tumor, although lessened in size, had not thickened in its walls, and the bruit was as loud as ever. He left the hospital and relapsed; in a month, cough became harassing and he expectorated 15 ounces of purulent matter in one night. He required ten minims of chlorodyne to keep him from vomiting the iodide; but in six weeks more his cough and expectoration was all gone, he was looking well and gaining flesh, and the pulsations were quieter. At the end of four months the pulsations were so quiet, and the walls felt so solid and dense, that he was able to leave the hospital.

CASE VIII. Was rather a case of disease of the aortic valves, attended with violent palpitation, severe pain over the heart, difficulty of breathing, with feeling of suffocation, on walking or going up stairs, all of which was relieved in a month by one-half drachm doses of the iodide, three times a day.

CASE IX. Was an aneurism of the innominata, in a patient aged 37, sick for three months with beating in the throat, pains shooting down from there into the right shoulder and arm, and especially up the right side of neck and head. On the right of the tracheal fossa there was a tolerably firm, but distinctly expanding, pulsatile tumor, rising up out of the chest, and nearly two inches in diameter. There was dulness on percussion, a dull thud, but no bruit on auscultation, propagated up the carotids, but not along the subclavians. Pulse 120. He took one-half drachm of the iodide three times a day, for three months, when the tumor was quite firm and solid, no longer dilating, but not materially lessened in size; and nine months after he was able to work, the tumor having almost disappeared, although there was still excessive pulsation.

CASE X. Was an aneurism of the aorta in a man aged 47, with cough, pain in the chest and down left arm, followed by great swelling of it; large pulsating tumor of right side. The patient had pain in the head and coryza, from the use of the iodide, but tolerance was soon established. Case is still under treatment.

CASE XI. Was one of the aorta, which had been kept in abeyance for six years, with the iodide, taken of his own accord, while following his business as a peddler. He was then treated in hospital, by recumbent posture, restriction of food and drink, and drachm doses of the iodide, three times a day. In two months, he was much relieved, pulsations were

no longer perceptible. Finally, while sinking from dropsy, he suddenly died of hemorrhage from the mouth. The heart and kidneys were sound, the aneurism did not press upon the trachea, bronchi, or gullet, the whole ascending aorta was atheromatous and calcareous; the middle coat greatly thinned; the mouth of the aneurism was three inches vertically and two inches across; the aneurism itself was four and a-half inches in breadth, and five inches long. A second aneurism of the size of a walnut rose from the right side of the aorta and pressed on the right auricle so as to occasion the dropsy. The larger aneurism contained firmly adherent fawn-colored clots, and some large, softer, and dark clots. The aneurism had not ruptured, and Balfour thinks it affords an apt illustration, not only of the mode of cure of an aneurism, but of one of those uncommon occurrences (the pressure of the right auricle), which rendered a well-devised and successful mode of cure abortive.—*J. C. P.—N. Y. Med. Gazette.*

Book Notices.

Annual Report of the Board of Regents of the Smithsonian Institute, for the year 1868.

This is an octavo volume of 473 pages, filled with matter of much interest to men of science, and very valuable for reference.

Published at the Government Printing house in Washington, D.C.

Diseases and Injuries of the Eye: Their Medical and Surgical Treatment. By GEORGE LEWSON, F.R.C.S. Surgeon to the Royal London Ophthalmic Hospital, Moorfields; and Assistant-Surgeon to the Middlesex Hospital. Philadelphia: LINDSEY & BLAKISTON. 1869. Pp. 236. Price, \$2.50. For sale by W. B. KEEN & COOKE, Chicago.

This work is designed as a manual or text-book for students and general practitioners. It presents a convenient summary of the present status of Ophthalmic Science, in regard to the diagnosis and treatment of diseases of the eye. From the

hasty glance we have taken of its contents, we think it will be found a very convenient and useful work.

The Pathology and Treatment of Stricture of the Urethra and Urinary Fistula. By Sir HENRY THOMPSON, F.R.C.S., Surgeon Extraordinary to H.M. the King of the Belgians; Professor of Clinical Surgery, and Surgeon to the University College Hospital. From the third and Revised London Edition. With Illustrations. Philadelphia: HENRY C. LEA. 1869. For sale by W. B. KEEN & COOKE, Chicago.

This is a well executed volume of 359 pages, presenting a full consideration of the subjects Urethral Strictures, and Urinary Fistulas, by an author of eminence and large practical experience.

A Handy-Book of Ophthalmic Surgery, for the use of Practitioners. By JOHN Z. LAURENCE, F.R.C.S., (University London), Surgeon to the Ophthalmic Hospital, Southworth; Ophthalmic Surgeon to St. Bartholomew's Hospital, etc., etc., etc. Assisted by ROBERT C. MOOR, late Assistant-Surgeon to the Ophthalmic Hospital, Southworth. With numerous illustrations. Second Edition. Revised and enlarged. By J. Z. LAURENCE. Philadelphia: HENRY C. LEA. 1869. Pp. 227. For sale by W. B. KEEN & COOKE.

This is an improved edition of a well-known work, and will be found useful in every physician's library.

Editorial.

CRIMINAL ABORTIONS.—The deaths from criminal attempts to procure abortions are disgracefully frequent. Many of them are never known to the public; and, yet, the number that are detected and published are sufficient to make any civilized community blush with shame. Within the last ten days, two cases

have occurred in this city, under such circumstances as to attract the attention of the legal authorities, and to cause investigation. In the first case, the girl was an inmate of a house of ill-fame, and the operation is alleged to have been performed by Henry R. Stratford, claiming the title of doctor. The other appears to have been a servant girl, seduced by some wretch and abandoned. The alleged operator, in her case, was Duncan MacRae, a reckless pretender, who for many years has advertised his ability to cure cancers and all other tumors, etc. In both cases, death followed the operation, in a few days. From the evidence before the Coroner's Jury, it would appear that producing abortions constituted a prominent part of the practice of both the misnamed doctors. They were promptly arrested by the police, have been indicted by the Grand Jury, on a charge of *murder*, and are now awaiting their trial in the Circuit Court. We think their indictment for *murder* is a mistake. Several such indictments have been found against different parties in this city before, but never has one been convicted, no matter how positive the evidence or how mercenary the crime. Neither is there likely to be any convictions on such indictments. The plain fact that the criminals acted without any malice or ill-will towards their victims, but, on the contrary, with the consent and at the solicitation of the latter, with the ability of counsel to present a plausible pretext that the victim died, not from the abortion, but from some accidental inflammation, will always render it difficult to procure a conviction of murder. It seems to us better to try all such cases on the simple charge of producing the abortion, on which they would be certainly convicted, and then inflict the full penalty allowed by the law. A few prompt convictions, even if the penalty was inadequate in comparison with the magnitude of the crime, would do more to suppress the horrid practices of the abortionist than any number of indictments for murder.

CLINICAL INSTRUCTION TO MIXED CLASSES.—It seems that our professional brethren in the colleges and hospitals of Philadelphia, that city of *brotherly love*, have had their sober sense

of propriety and their innate modesty rudely shocked by the appearance of a company of *female* medical students, at the Pennsylvania Hospital. So rude, indeed, has been the shock, that it has called forth a formal protest against such attendance of females in company with the males, signed by the faculties of the Pennsylvania University, the Jefferson Medical College, and the boards of physicians and surgeons of the several hospitals in that city.

The basis of the protest is as follows:—

1. Clinical instruction in practical medicine demands an examination of all the organs and parts of the body, as far as practicable; hence, personal exposure becomes, for this purpose, often a matter of absolute necessity. It cannot be assumed, by any right-minded person, that male patients should be subjected to inspection before a class of females, although this inspection may, without impropriety, be submitted to before those of their own sex. A thorough investigation, as well as demonstration, in these cases, so necessary to render instruction complete and effective, is, by a mixed audience, precluded; while the clinical lecturer is restrained and embarrassed in his inquiries, and must, therefore, fall short in the conclusions which he may draw, and in the instruction which he communicates.

2. In many operations upon male patients, exposure of the body is inevitable, and demonstrations must be made which are unfitted for the observation of students of the opposite sex. These expositions, when made under the eye of such a conjoined assemblage, are shocking to the sense of decency, and entail the risk of unmanning the surgeon, of distracting his mind, and endangering the life of his patient. Besides this, a large class of surgical diseases of the male is of so delicate a nature as altogether to forbid inspection by female students. Yet a complete understanding of this particular class of diseases is of preëminent importance to the community. Moreover, such affections can be thoroughly studied only in the clinics of the large cities, and the opportunity for studying them, so far from being curtailed, should be extended to the utmost possible degree. To those who are familiar with such cases as

are here alluded to, it is inconceivable that females should ever be called to their treatment.

3. By the joint participation, on the part of male and female students, in the instruction and in the demonstrations which properly belong to the clinical lecture-room, the barrier of respect is broken down, and that high estimation of womanly qualities, which should always be sustained and cherished, and which has its origin in domestic and social associations, is lost, by an inevitable and positive demoralization of the individuals concerned, thereby entailing most serious detriment to the morals of society. In view of the above considerations, the undersigned do solemnly protest against the admixture of the sexes, at clinical instruction in medicine and surgery, and do respectfully lay these their views before the boards of managers of the hospitals in Philadelphia.

November 15, 1869.

It will be seen that the protestants make the whole matter a simple question of modesty or propriety. They utter no word against females studying or practicing medicine and surgery, but only against their studying and attending clinical instruction, in company with the opposite sex. We are satisfied that the position thus assumed is untenable. The *indelicacy*, the impairment of *respect* for the sex, and the danger of *disconcerting* the operator or clinical teacher, in his work, are all propositions that look formidable in prospective, but which vanish when brought practically to the test. The rule on which every every intelligent physician daily rests is, that whatever is *necessary* for the proper investigation of disease and the relief of suffering is neither indelicate nor improper. It is on this broad, plain rule that the profession has justified itself in dissecting dead bodies, in examining the sexual organs of the female, and in admitting students of either sex to all the necessary practises of the clinical wards of public hospitals. If a company of young men can witness examinations and operations on the sexual organs of the female, without indelicacy or impropriety, by what kind of logic can it be maintained that it is indelicate or improper for an audience of females to witness examinations

and operations on the sexual organs of the male? And if such company may witness these things separately, why not together? Each company justifies itself separately by its motive, namely, that of gaining such knowledge of disease as will enable its individual members to alleviate human suffering and prolong human life. And if each is actuated by this motive, and this only, there will be neither more indelicacy or embarrassment in looking together, at one and the same suffering patient, than if they were an hundred miles apart. If actuated by this motive (and it is only this that can justify the presence of either sex at all), the presence of both sexes simply operates as a check to heedless and unnecessary exposures of the sick, and to the indulgence of a propensity to tell *smutty stories* in the lecture-room, which, we are sorry to know, some medical teachers possess.

The moment we admit that there is any question of indelicacy or impropriety in admitting students of either or both sexes to such examinations and operations as are necessary to fit them to practise the profession of medicine, surgery, and obstetrics intelligently and beneficially to the community, that moment we lay the foundation for the claim that each sex must have a doctor of its own gender, and the presence of a male doctor in the bed-chamber of a female patient becomes a sexual impropriety. We do not believe that even Philadelphia modesty and refinement is prepared for such a conclusion. The truth is, that for several years past, females have attended freely clinical instruction, in the same classes with the men, in some of the best hospitals in Europe and America. We understand they are now attending the Bellevue and other hospitals in New York; and when, on a recent occasion, some one offered a resolution opposing their attendance, it was promptly voted down by the male members of the class in Bellevue Hospital.

A few female students have attended regularly the clinics in the Cook County Hospital, in this city, in the same classes with the young men, for two or three years past. Although the clinical instructors of that institution are proverbially modest men, and some of them, at least, unmarried, we have heard no intimation that they had been disconcerted or in the least interfered with in the proper performance of their duties.

While, in the foregoing remarks, we repudiate the idea of indelicacy in the study of medicine, by either or both sexes, we by no means advise females to study medicine or practise it as profession. Of all the secular employments in civilized society, there are very few so little suited to the nature and necessities of woman. The labor, mental and physical, the exposures, at all hours, and in all places, the necessity of being ready for action night or day, in the mansion or the hovel, are all circumstances incompatible with the physical necessities and designs of the sex. We have no sympathy with the modern hub-bub about womans' rights and wrongs. But a few singularly constituted women will study medicine, and the quicker the profession everywhere cease to pay any special attention to them, either by favor or opposition, the sooner will they cease to attract attention or call forth newspaper notoriety.

EXTRACT of ergot for subcutaneous injection is thus made: from a formula recently published: Ext. ergot two parts, alcohol and glycerine, of each, seven parts.

HIPPOCRATES died at the age of 109; Galen lived to be 104; Solon and Thales 100; Zeno 98; Diogenes 88; Plato 94; Lycurgus 85; Sophocles more than 100; Asclepiades also Juvenal 100; Newton 85; Fontenelle 99; Buffon 81; and Voltaire 84.—*Med. Gazette.*

PRURITUS VULVA.—It is stated that pruritus vulva is often entirely cured by a lotion consisting of five parts of corrosive sublimate dissolved in 50 parts of alcohol. A teaspoonful of this solution is diluted with a pint of tepid water, and applied as a wash to the parts three times daily.—*St. Louis Medical Archives.*

WARTS.—The modern scientific name of this disorder is *Myrmekiasmos*, but the principal point is the surprising rapidity with which an extensive cluster of warts will disappear under the use of arsenic, without any local application whatever. Potassa fusa has been used locally. The warts should be saturated with a solution of equal parts of potassa fusa and water, until the horny growth is dissolved and the papillæ destroyed by this caustic.—*Medical Gazette.*—*St. Louis Med. Archives.*

MORTALITY FOR THE MONTH OF OCTOBER, 1869:—

CAUSES OF DEATH,

Accident, drowned---	2	Cyanosis-----	1	of-----	1
“ crushed by		Debility-----	6	Kidneys, Bright's dis-	
timber-----	1	“ general-----	2	ease of-----	3
“ burned by		Delirium tremens---	3	“ “and hem-	
kerosene-----	2	Diarrhoea-----	20	orrhage after	
“ excessive		“ and burns of		confinement	1
gymnastics---	1	body and arms,	1	Laryngitis-----	2
by fall-----	5	“ chronic-----	9	Liver, disease of, and	
“ morphine---	1	Diphtheria-----	27	dropsy-----	1
“ run over by		“ and scarlet fever,	1	“ abscess of---	2
truck-----	1	Dropsy-----	6	“ induration of	
“ by railroad,	3	Dysentery-----	14	and dropsy---	1
thrown from		“ chronic-----	3	“ cirrhosis of---	1
wagon-----	1	“ acute-----	1	“ paralysis of---	2
“ suffocation---	1	“ typhoid-----	1	Lungs, congestion of.	5
“ scalded-----	1	“ and phrenitis---	1	“ paralysis and	
“ injured by		Enterocolitis-----	1	brain congest'n	1
water pipe---	1	“ chronic-----	1	“ hemorrhage of	1
Anus imperforate---	1	Enteritis-----	8	Manslaughter-----	1
Angina-----	1	“ acute-----	1	Measles-----	2
Apoplexy-----	8	Epilepsy-----	1	“ and diarrhoea---	1
“ and pneumonia,	1	Erysipelas-----	1	Metro-peritonitis, puer-	
Ascites-----	1	“ and icterus---	1	peral-----	2
Asphyxia-----	2	Fever, congestive---	2	Meningitis-----	2
Births, premature---	28	“ puerperal-----	3	“ cerebro-spinal,	
“ still-----	44	“ remittent-----	5	“ tubercular---	1
“ tedious-----	1	“ scarlet-----	42	Metritis, puerperal---	1
Brain, inflammation of	4	“ “ malignant,	1	Neck, cancer of-----	1
“ softening of and		“ “ and diph-		Nephritis-----	1
cancer-----	1	theria-----	4	Necrosis-----	1
Bronchitis & teething,	1	“ typhoid-----	36	Old age-----	12
Cancer, scirrhous---	1	“ “ and lungs,		Occipital bone, depres-	
“ of mammary gland	1	congestion of	1	sion of-----	1
Caecum, inflammation		“ “ and bowels,		Paraplegia from injury	
of and peritoneum---	1	mortification	1	to back-----	1
Cerebritis & paralysis,	1	Gastritis-----	3	Paralysis-----	2
Cholera infantum---	31	Gastro enteritis---	1	“ from intem-	
Cirrhhosis, hepatic---	1	Hemorrhage from fe-		perance-----	1
Convulsions-----	45	ver sore-----	1	Pericarditis following	
“ puerperal---	2	Hamorrhage, internal		measles-----	1
“ and teething	1	from aneurism---	1	Peritonitis-----	3
Consumption-----	44	Heart, disease of---	2	Phlebitis-----	1
“ and dropsy,	1	“ “ and pneumonia.	1	Phrenitis-----	2
“ and heart,		“ “ and intemper-		Pneumonia-----	16
valvular dis-		ance-----	1	“ typhoid-----	3
ease of-----	1	“ hypertrophy of,	1	“ and cholera	
Croup-----	21	“ organic disease of	1	infantum-----	1
“ diphtheretic---	2	“ valvular disease	3	Pyæmia-----	3
“ membranous	5	Hepatitis-----	1	Scrofula-----	1
Cranium, malforma-		Hydrocephalus-----	6	Spleen, tubercular en-	
tion of-----	1	“ acute-----	6	largement of---	1
Crusta lactia retroces-		Inanition-----	14	Stomach, cancer of---	1
sion of-----	1	Intemperance-----	4	Suicide-----	3
Cyanch maligna---	2	Knee, white swelling		Tabes mesenterica,---	24

Teething.....	7	Trismus.....	1	Whoop.-cough & brain	
" and cholera		Uremia.....	1	congestion	1
infantum.....	2	Uterus, cancer of.....	2	" "lungs con-	
Tetanus.....	1	" hemorrhage of,		gestion of	1
Throat, ulcerated sore,	1	" "childbirth" -	1	Unknown.....	1
Tongue, gangrene, mal-		Whooping-cough.....	10		
ignant.....	1	" "bronchitis	1	Total.....	597

COMPARISON.

Deaths in Oct., 1869, --	597	Deaths in Oct., 1868, ---	449	Increase, ---	148
Deaths in Sept., 1869, ---		814	Decrease, ---		217

AGES.

Under 1.....	165	20 to 30.....	64	70 to 80.....	19
1 to 3.....	131	30 to 40.....	41	80 to 90.....	4
3 to 5.....	44	40 to 50.....	19	90 to 100.....	1
5 to 10.....	43	50 to 60.....	24		
10 to 20.....	29	60 to 70.....	13	Total,	597
Males,	322	Females,	275	Total,	597
Single,	471	Married.....	126	Total,	597
White,	594	Colored,	3	Total,	597

NATIVITY.

Bohemia,	1	England,	12	Sweden,	15
Canada,	9	France,	2	Scotland,	2
Chicago, Native,	100	Germany,	74	Switzerland.....	1
Chicago, Foreign,	216	Holland.....	2	Unknown,	2
U. S., other parts,	87	Ireland,	57		
Denmark,	5	Norway,	12	Total,	597

MORTALITY BY WARDS FOR THE MONTH.

Wards.	Mortality.	Pop. in 1868.	One death in	Mortality.	
1...	7	9,094	1299 1-7	Accidents,	20
2...	23	13,074	568 $\frac{1}{2}$	County Hospital,	18
3...	21	15,076	718	Immigrants,	14
4...	21	17,796	847 $\frac{1}{2}$	Mercy Hospital,	10
5...	51	16,033	314 $\frac{1}{2}$	Massasoit House,	1
6...	26	13,083	503 1-5	Manslaughter,	1
7...	50	25,492	510	Protestant Orphan Asylum,	2
8...	59	15,813	263	St. Joseph Orphan Asylum,	9
9...	32	19,297	603	Steamer S. Van Epps,	1
10...	12	12,925	1077	Soldiers' Home,	1
11...	20	14,340	717	Suicide, Poison,	3
12...	85	17,485	205 $\frac{1}{2}$		
13...	19	11,164	587 $\frac{1}{2}$	Total,	597
14...	34	14,839	436 $\frac{1}{2}$		
15...	39	21,078	702 $\frac{1}{2}$		
16...	18	15,465	396 $\frac{1}{2}$		

THE extract of Calabar bean when instilled into the eye produces contraction of the pupil, but when injected hypodermically, it produces dilatation of the pupil. It has been found to be the best antidote for atrophine. Epilepsy treated by it is not removed or modified. It has given good results in the treatment of chorea.—*Richmond and Louisville Med. Journal.*

ARSENIC IN DISEASES OF THE SKIN.

Thomas Hunt, F.R.C.S., Surgeon to the London Western Dispensary for Diseases of the Skin (*Journal of Cutaneous Medicine*), speaks of arsenic as follows:—We have a remedy for at least one-half of the diseases to which man is subject. Arsenic, therefore, if rightly used, is adapted to the treatment of six out of every seven cases of chronic skin disease which the physician is asked to relieve. Supposing the preparation to be Fowler's solution, he states that it should be carefully administered. *First.* It should be given in divided doses—three doses in 24 hours, simply to avoid an unnecessarily large dose. *Second.* It should be diluted with pure water, or if the case require the influence of antimony, the vinum antimonii, say 35 minims, may be combined with five minims of the liquor arsenicalis, and this may be taken diluted three times a day. *Third.* This dose should be taken with, or immediately after, a meal, in order that, being mixed with the patient's food, it may find a ready entrance into the blood, and that the bare possibility of its irritating the mucous membrane of the stomach or bowels may be avoided. Not that there is any danger of mischief, but the patient, aware that he is taking arsenic, may be disabused of all fanciful or imaginary suffering of this kind. *Fourth.* Arsenic acts very slowly, and, therefore, it is best to begin with an average dose, say five minims of Fowler's solution; and this should be increased, not day by day, as was the practice 30 years ago, but two, three, or four weeks should be allowed to elapse before any necessity can exist for augmenting the dose. If an active or severe inflammation of the tunica conjunctiva in both eyes should be set up, then the medicine is not to be abandoned in a panic, but the dose may be reduced to four minims, and in a week or ten days the conjunctiva will be less inflamed. During the first week, if the patient has been properly prepared for the course, the disease of the skin will show some amendment; it will be shorn of its strength, and from this time the cure will be easy enough, although it may take weeks, or even months, to effect it entirely. The health of the patient must be closely watched, and the secretions carefully sustained. Above all, the bowels must not be allowed to act sluggishly. In many cases, a full dose of calomel and comp. colocynth pill will be required two or three times a week; and these doses are sometimes essential to the cure.

If the legs, feet, or abdomen become puffy or œdematous, the urine being scanty or turbid, the case will not progress well

until the kidneys are aroused to vigorous action by full doses of spiritus ætheris nitrosi and acetate of potash largely diluted with water. Young children bear arsenic well, and girls about the age of puberty generally bear and require larger doses than adults of either sex. A child of one year old will require about half the dose proper for an adult. Finally, he recommends freshly prepared Fowler's solution, of a light color, as the red lavender, which for some foolish reason is generally mixed with the solution, often becomes stale and nauseous. The best way of measuring the dose is to mix a drachm of Fowler's solution with seven drachms of water, giving 40 minims as the proper dose, representing five minim doses of the original solution; by measuring 40 minims each time, the patient has a better chance of getting the right dose than in the uncertain bulk of *drops* and *spoons*.—*Medical Record*.

FAVORABLE RESULT OF TRANSFUSION.—*The Boston Medical Journal*, quoting from the *Medical Times and Gazette*, gives the following encouraging account of the result of transfusion:

Professor Landois, of the University of Griefswald, who has interested himself much in the subject of transfusion, after giving a critical account of the most recent publications on the subject, thus sums up, in a recent number of the *Wien. Med. Woch.*, the results that have hitherto been obtained:—1. Transfusion has been performed 99 times in cases of hemorrhage, in eleven of which cases, no successful result was even possible. Of the remaining 88 cases, 65 were attended with success, 20 were unsuccessful, and in 3 the result was doubtful. 2. It has been performed 12 times in cases of acute poisoning, one of these being hopeless. In three the results were favorable, and in eight unfavorable. 3. For various forms of disease attended with exhaustion, it has been resorted to 43 times, the most unfavorable prognosis having been frequently delivered. In these, the results were favorable in 12, unfavorable in 21, and doubtful in 9, while in one case it was a mere desperate experiment. Professor Landois observes that these statistics speak very satisfactorily for transfusion, and that the results would be far more favorable if this almost harmless operation were not usually driven on to the last minute.—*St. Louis Medical Archives*.

THE MINUTE STRUCTURE OF THE PANCREAS.—It is generally believed that the structure of the pancreas is identical with that of the salivary glands. M. Giannuzzi has made this organ

the subject of microscopic research, and points out the following differences:—"The excretory ducts of the pancreas have very thin walls, which are covered interiorly by a cylindrical epithelium. They have not the same connections with the secreting vesicles as in the salivary glands, but they establish around them a network composed of very fine tubes, which have no epithelium, and which surround the pancreatic cellules in their meshes. This network may be compared to that of the biliary ducts of the liver. The network of the excretory ducts of the different vesicles which form the same glandular lobule have connections between them, and constitute a common network. The terminal ramifications of the bloodvessels of the pancreas follow, in general, the tracts of the pancreatic ducts. The pancreatic vesicles are without The pavement epithelium of the vesicles is formed of flattened cellules with a nucleus and prolongation."—*Gaz. Hebd.*—*N. Y. Med. Record.*

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